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ENCYCLOPAEDIA ASIATICA

ENCYCLOPAEDIA ASIATICA

Comprising

INDIAN SUBCONTINENT
EASTERN AND SOUTHERN ASIA

Commercial, Industrial and Scientific

By

EDWARD .BALFOUR

IN NINE VOLUMES

VOL. II. BOEHMERIA-CUMIN



COSMO PUBLICATIONS
NEW DELHI **INDIA**

COSMO PUBLICATIONS

24-B, ANSARI ROAD, NEW DELHI-110002.

The present work was originally published with the title "Cyclopaedia of India and of Eastern and Southern Asia" in 1858 and after an edition in 1873, was completely revised in 1884. The present edition which is released with the title 'Encyclopaedia Asiatica,' is a reprint of that revised edition and contains prefaces to First, Second & Third editions, which were not available in the last edition.

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PREFACE TO THE FIRST EDITION

Whilst we find books of reference in most departments of sciences and literature in connection with European countries, daily becoming cheaper and more abundant, those who investigate and seek for information regarding the sources of British India, or any of the Scientific and economic subjects connected with Eastern Countries, still meet with much difficulty and hindrance, owing to the necessity of consulting numerous authors whose works are scarce or costly. And as some inquirers are without the pecuniary means of procuring all the requisite books and Journals, or find it impossible to procure them at any cost, whilst others want leisure or opportunity for such extensive research, it is evident that progress in these branches of knowledge would be greatly facilitated, by collecting and condensing this widely dispersed information, thereby enabling future inquirers to gain some acquaintance with the results of the investigations made by the many diligent and laborious individuals, who have devoted a great portion of their time to collecting information over the vast areas of Southern Asia.

My avocations while employed in India, more particularly in the past seven years, have rendered necessary for me a collection of books of reference relating to India and the East, somewhat more numerous and varied in character than private individuals generally possess ; whilst my employment a Secretary to the Madras Central Committees for the Great Exhibition of 1851, the Madras Exhibition of 1855, the Universal Exhibition held in 1855, in Paris, and the Madras Exhibition of 1857, combined with my duties (since 1851), as Officer in Charge of the Government Central Museums, have brought under my notice a rare variety of Eastern products and subjects of interest; and thinking that, before quitting the countries in which I have dwelt for nearly a quarter of a century, I might, with advantage leave to my successors in a portable form, the notes made on the products of the East that have come under my notice, combined with an abstract of useful information respecting these contained in my books, I have been led to show the results in the present shape.

A work of this aim and character might doubtless fully occupy the life time of several men attainments ; and this Cyclopedia of India and Eastern and Southern Asia, may therefore be regarded only as a first attempt towards the kind of book, the want of which has been long and generally felt. But although fully conscience of its incompleteness in many respects, yet, I trust it may still

be received with all imperfections and omissions, as a useful and opportune addition to Asiatic literature ; at least by those who recognize the greatness of the saying of Emerson, that "the thing done avails, and not what is said about it; and that an "original sentence, or a step forward, is worth more than all the censors"* which may be made by such as are disposed to find fault, or who would demand in a work of this kind, a degree of perfection unattainable on a first trial.

The book is merely a novelty in form, the matter it contains being as old as our possessions in India : it is simply a compilation of the facts and scientific knowledge, which authors and inquirers have been amassing and communicating since then, to one and another and the public. But, "in our time, the higher walks of literature have been so long and so often trodden, that whatever any individual may undertake, it is scarcely possible to keep out of the foot steps of his precursors",† and this Cyclopedia. I may, therefore, avow to be put an endeavour to make generally available, in a condensed form, the information acquired by those who have in any way investigated the natural or manufactured products of Southern Asia, or have at any time made its arts or natural history the subjects of inquiry. Some of those whose writings I have made use of, have long since gone to their account, but many a labourer yet alive may find the result of his labours embodied here ; and I have done this freely, because even those whose writings I have most largely drawn, will acknowledge that the quaint old lines of Chaucer†† still apply with full force; viz. that,

"Out of the old field, as man sayeth,
Cometh all his new corn fro' year to years;
So out of old books, in good faith,
Cometh all this new Sciences that men lere"

Indeed, I have rather sought to collect and condense accurate and well ascertained facts than to present novelties; for originality is but too often unconscious or undetected limitation. Byron, years ago, remarked that all pretensions to it are ridiculous; and a wiser one than Byron has told us that "there is nothing new under the sun." But if there be nothing absolutely new in this work, I hope it may yet be found to contain much which to many was unknown before; and which for want of books, liesure, or opportunity, may have debarred them from learning.

The Cyclopedia is not intended to comprise the whole Science of Botany, nor that of Medicine or Zoology; nor to instrust in all the matters useful in Commerce or the Arts; but, whether examined for information or ammusement, the botanist, the medical practitioner, the naturalist and the merchant,

*English Traits p. 5

†Salad for the Social, p. 317

††Ibid, page 321.

may perhaps each find something in it which, from his engagements he did not know before, or though once knowing he may have again forgotten. In both cases, the work may prove useful, since old thoughts are often like old cloths; put away for a time, they become apparently new by brushing up. It would have been better perhaps, had a work of this kind been undertaken years ago, or even now were it made the joint effort of several persons : indeed, to render it in any way complete, would call for the resources at the command of a Government rather than of individuals; but we cannot have every thing at the time we wish, nor in the way we wish, and it is better to have some one undertake it and do it the best way he can, now, than to postpone it to some further indefinite period.

With a view therefore of laying a foundation as a starting point for future inquirers, I now undertake the commencement of a work, towards which I hope to receive from many quarters aid and support as I proceed : being thereby enabled either to produce future enlarged and improved editions of the work my self, placing it, as I hope, within the reach of all, or seeing that task taken up here after, by younger men, with more time and opportunities than are now before me. A dinner of fragments is often said to be best dinner, and in the same way, there are few minds that might furnish some instructions and entertainment, from their scraps, odds and ends of knowledge. Those who cannot weave a uniform web, may atleast produce a piece patchwork; and any items of information sent to me will be very acceptable.

There is another difficulty which inquirers in this country have had to meet and struggle with ; I allude to the many languages and dialects in use in India and Eastern Asia, and subsequently the variety of scientific, national, or even local names, by which the same thing is known. The only means of overcoming this difficulty was to frame a copious index of Contents; for Pope has well said that,

“Index learning turns no student pale,
yet holds the eel of science by the tail.”

This Indexing will add to the bulk of the book, but greatly also to its value as a work of reference; and will be carefully completed.

PREFACE TO THE SECOND EDITION

The first edition with its two Supplements contained 29,870 names and the work was favourably received by the public and press. But my acquaintance with these countries did not permit me to regard that number as other than a foundation for an enlarged and improved edition, and this second edition will contain about 100,000 names, under which much connected with India and with Eastern and Southern Asia will be found.

I have spared neither time nor labour to make the present edition as perfect as possible, but a Cyclopedia must necessarily ever be progressive.

1871

Edward Balfour

PREFACE TO THE THIRD EDITION

THE first edition of this Cyclopædia was published in 1858 in India, the second, also in India, in 1873, and the years 1877 to 1884 inclusive have been occupied in revising it for publication in England. During this process, every likely source of further information has been examined, and many references made. I am under obligations to many learned men, to the Secretariat Officers of the Indian Governments, and to the Record and Library Officers of the India Office, Colonial Office, and British Museum, for their ready response to my applications for aid. •

This edition contains 35,000 articles, and 16,000 index headings, relating to an area of 30,360,571 square kilometers (11,722,708 square miles), peopled by 704,401,171 souls. In dealing with subjects in quantities of such magnitude, oversights and points needing correction cannot but have occurred; but it is believed that errata are not many, and will be of a kind that can be readily remedied.

It is inevitable that difficulties in transliteration should be experienced, owing to the variously accented forms which some words assume even among tribes of the same race, also to the different values accepted in many languages for the same letters, and especially to the want of correspondence in the letters of the several Eastern alphabets; but in this work traditional and historical spelling has not been deviated from, and the copious Indices will guide to words of less settled orthography.

Men of the same race, habits, and customs, plants and animals of the same natural families, genera, and even species, are so widely distributed throughout the South and East of Asia, that local histories of them are fragmentary and incomplete. India in its ethnology, its flora and fauna, can therefore only be fairly dealt with by embracing a wider area. This is the reason why the Cyclopædia and my work on the Timber Trees include all Eastern and Southern Asia, the regions, the areas and populations of which may be thus indicated :—

INDIA, EASTERN AND SOUTHERN ASIA.	SQUARE KILOMETERS.	POPULATION.
Caucasus, Russian,	472,666	5,546,554
Trans-Caspian, do.	327,068	203,000
Central Asia, do.	3,017,700	5,036,000
Independent Turkoman Region,	206,500	450,000
Khiva,	57,800	700,000
Bokhara, Thignan, Karategin, etc.,	239,000	2,130,000
Arabia,	3,156,600	5,000,000
Persia,	1,647,070	7,653,000
Afghanistan and Provinces,	721,664	4,000,000
Kafiristan,	51,687	500,000
China Proper,	4,024,690	350,000,000
China Provinces,	7,531,074	21,180,000
	11,555,764	371,200,000
Corea,	236,784	8,500,000?
JAPAN AND PROVINCES,	382,447	36,357,212
British India and Feudatories,	3,774,193	252,541,210
Nepal, Bhutan,	234,000	3,300,000
French India,	508	276,649
Portuguese India,	3,355	444,987
Ceylon,	24,702	2,606,930
FURTHER INDIA—		
British Burma,	229,351	3,707,646
Manipur,	19,675	126,000
Tribes south of Assam,	65,500	200,000
Burma, Independent,	457,000	4,000,000
Siam,	726,850	5,750,000
Annam,	140,500	21,000,000
French Cochín-China,	59,456	1,597,013
Cambodia,	83,861	890,000
Malacca, Independent,	81,500	300,000
Straits Settlements,	3,742	390,000
ISLANDS—		
Andamans,	6,497	14,500
Nicobars,	1,772	5,500
Sunda Islands, Moluccas,	1,693,757	28,867,000
Philippines, Spanish Indies,	296,182	6,300,000
Netherland India,	677,038	27,154,054
New Guinea and Papuan Islands,	785,362	807,956
British Northern Borneo,	57,000	150,000
Australia, . . . . .	...	2,193,200
Tasmania, . . . . .	...	115,705
New Zealand, . . . . .	...	489,933
Total, excluding Australia, Tasmania, and New Zealand,	30,360,571 sq. kil. 11,722,708 sq. m.	704,401,171

I am under obligations to Messrs. Morrison & Gibb for their careful press-work. All that their art could do has been done to aid me in keeping the work in a compact form.

EDWARD BALFOUR.

ENCYCLOPAEDIA ASIATICA

VOL. II.

BOEHMERIA-CUMIN

BOEHMERIA NIVEA. *Hooker and Arn.*

Urtica nivea, Linn. | *Urtica tenacissima*, Roxb.
 „ *candicans*, Burm. | *Boehmeria candicans*.

China grass, . . . ENG. | Rhea, Dom Rhea, HIND.

This plant is cultivated in the eastern parts of India and in China for its fibres, which are second to none for strength and beauty, and are used for textile fabric. It grows rapidly and luxuriantly, and can be cut three or four times in the course of the year; the young shoots are those which are used, and on the stem being cut down, numerous straight simple shoots spring up from one to eight feet high.—*Drury's Useful Plants*. See Rhea.

BOEHMERIA PUYA, *Royle*, is botanically a different species from the *B. nivea*, though its fibre is almost identical with that furnished by *B. nivea*. It flourishes at Darjiling, Dehra Doon, and other places in the north of India. Its commercial value is the same as that of Rhea, affording the Puya fibre of Northern India.

BOEHMERIA RUGULOSA, *Wedd.*, grows in Garhwal and Darjiling Terai.

BOEHMERIA SALICIFOLIA. *D. Don*.

Urtica salicifolia, Roxb. | Silharu, . . . PANJ.

A plant of the Moluccas and of the Himalayas, as far as Dehra Doon, found in Simla and in Garhwal, and in the Sutlej valley between Rampur and Sunjam, at an elevation of 6000 feet. Used for making ropes. Its berries are edible.—*Royle*; *Voigt*, 280; *Cleghorn, Punjab Report*, p. 68.

BOEHMERIA UTILIS. *Royle*. Rhea.

Bon or Bun Rhea. | Leepchah of . . . NEPAL.

Jungle Rhea is common in Nepal and the Assam forests, and thrives best in the vicinity of water or of running streams. When unmolested it grows to a tree, but, by proper management, the divided roots afford numerous shoots, and the plant can be propagated by slips as well as by the seed. Its cultivation for its fibre might be carried on, as with the willow in Europe. It is said to be exported into Southern, from Northern, China. It is cultivated largely by the hill tribes north-west of Yunnan, and by the Singphos and Dhoanmas of the north-eastern frontier of India to a small extent only, for a coarse cloth, but chiefly for nets. The Nepalese recognise it as the Leepchah of Nepal (*Journ. Agri.-Hortic. Soc.* vii. p. 222). This fibre is well adapted for rope-making. It is about five feet in length, brown in colour, strong, and flexible. It is all that can be desired either for canvas or lines, and only requires to be known to be generally used for such purposes. It was made into a five-inch rope by Messrs. Huddart, along with the Dom Rhea or China-grass, and broke with a weight of about nine tons, or precisely 21,025 lbs. Since then, it has been made up into ropes of various sizes, which greatly exceed in tenacity those made of Russian hemp of the same size. It has also been made up into lines and cords, some of them almost fine enough for fishing lines; in all which it displays its fitness for all such purposes, from the union of strength and flexibility. It was valued at £35 a ton.—*Royle, Fib. Pl.* p. 363.

BOERHAAVIA ERECTA. Linn. Hog-weed.

B. procumbens, Roxb., *W. Ic.*

Tikri,	HIND.	Mukaratay kiray, .	TAM.
Tamirama,	MALEAL.	Ataka mamidi, . .	TEL.
S'inadika,	SANSK.	Adavi mamena, . .	"
Var. α. Rorua, Gada-poorna, deep-rose.			
Var. β. Alba, Shwet-poorna, white.			

A very common, troublesome weed. The long fusiform perennial roots strike so deep as to render it no easy task to dig them up. It produces blossoms and ripe seed during the whole year. Horsfield says that in Java this is deemed emetic. The native practitioners of India reckon the root amongst laxative medicines, and prescribe it in powder. The small round leaves which grow at the joints of the stalks of the plant are eaten.—*Roxb.* ii. 146; *Ains.*; *O.Sh.*; *Voigt*, 328.

BO-GAIIA. SINGH. *Ficus religiosa*.

BOGLE, GEORGE, in 1744 was deputed to Tibet by Warren Hastings as ambassador.

BOGNIO or Bounigo. JAPAN. A governor.

BOGRA, a revenue district in the Rajashyo, Koch-Bahar, division, between lat. 24° 32' 15" and 25° 18' 30" N., and long. 88° 54' 15" and 89° 48' E., with an area of 1491 square miles, and a population of 689,476 souls, chiefly semi-Hinduized aborigines of the Koch's, Pali, and Rajbansi races, and the Ghatwal. There are also a large number of Kaibartta cultivators, with boating and fishing castes. The mound of the ruined city of Mahasthana is, as the shrine of Shah Sultan, largely visited by Mahomedans.—*Beng. Dir.*; *Imp. Gaz.*

BOGSIA, a tribe occupying the low Terai adjoining Rohilkhand.

BOGUE FORTS were captured by the British navy on the 25th February 1811.

BOGUM - WANIU. TEL. From Sanskrit Bhogam. Common women. See Basava; Murli.

BOHRA. HIND. *Bignonia undulata*.

BOINI. HIND. With shopkeepers and hucksters, the first money received of the day; it is the handsel of the British. Throughout India, credit for such transaction is not allowed; it must be a ready-money transaction.—*Elliot*.

BOHRA. Many of the Mahomedan shopkeepers on all the western side of India, and as far east as Secunderabad and Bellary, are Bohra, and they are in many parts of Central India and the N.W. Provinces; in the Rajput states, on the north-western coast of peninsular India, and are gradually extending to the south. They call themselves Ismaili, acknowledge an Archimandrite or religious chief, and are an active, intelligent, mercantile race. They are scattered all over the country, but are found principally in Gujerat and the adjoining provinces of Cutch, Sind, and other parts of the Bombay Presidency. They are a peaceable, inoffensive body of men. They are fair, robust, somewhat taller than the average Englishman. Wilson says that these appear to have originated in Gujerat, where they became converts to Mahomedanism; but they seem to have come from Sind. They are engaged in every branch of commerce as wholesale merchants of the first class, as well as pedlars; and sometimes both characters are to be found in the same person. They are a chief medium through which the retail trade in European articles is carried on. The good understanding in which they live with each other strengthens their association; and though they have in former times suffered from the violence of power, few of the industrious classes have escaped so well, during the worst of times, as the Bohra. They are united under the spiritual rule of their elected mullah, or priests, to whose orders, in conformity with the ancient precepts of the remarkable sect of Mahomedans to which they belong, they render

implicit obedience, corresponding in many respects with the Ismailiyah, the Ansariah, the Mutawilah, and the Druses of Syria, and holding the doctrine of the divine character of Ali. They are of the sect of the Hasani, the Assassins once so dreaded in Egypt and Persia, for the murders perpetrated in blind obedience to the mandate of their spiritual chief, so famous in the crusade history under the name of the Old Man of the Mountain, or Shaikh-ul-Jabal. At Oojein, in Sir J. Malcolm's time, 1200 families lived in four mahal or wards connected with each other, but separated by strong gates from the other parts of the city. No one except a Bohra could enter their precincts without leave. The chief mullah, who resided at Oojein, was appointed by the, high priest of this class at Surat, and his authority extended over all his sect. His orders regulated their most minute actions; and he promulgated annually a table of rules for their guidance. He estimated the Bohra in his diocese or charge at nearly 10,000 families, or about 45,000 souls. They seem to abstain wholly from political intrigue, are liberal-minded and open-handed, and as good citizens far excel the Mahomedans either of Arab or Persian descent. The name is said to be derived from Beohar, trade. Wilson says the word is derived from the Gujerati words, Vohora, Wohoro, and Ohoro. The Bohra in the N.W. Provinces of India and the Upper Doab have a humbler branch, called Koyan or Kette, who are money-lenders. Sir J. Malcolm says that besides the Mahomedan Bohra, there is a tribe of Brahmans from Nat'hdwara in Mewar, who have likewise this appellation.—*Elliot; Malcolm's Central India*, ii. p. 111; *Census*.

BOI, TEL., also pronounced Bhui. On the Madras side of the Peninsula, a palanquin-bearer; fisherman employed also as a house-servant.

BOIDU. TEL. A man of the cowherd or shepherd caste.

BOIL. The Delhi boil, Sind boil, and Aleppo boil are very intractable diseases. The Aleppo boil, about the size of a shilling, occurs in Teheran. It is of a livid colour, not painful; its progress is slow. It is called the Hebt-us-Sinne, or the Blotch of a year, also the Haleb-chiban. It is seldom cured in 8 months.

BOILA. NEPAL. *Bauhinia Vahlia*.

BOIS. FR. Wood; hence Bois à batir, Bois de charpente, timber.

BOJ. HIND. *Acorus calamus*, also *Typha angustifolia*.

BOJA. TEL. *Inga xylocarpa*.

BOJAH. HIND. *Eleusine coracana*; beer made from this grain.

BOJAJA. JAV. Crocodile.

BOJH, also Bcjh. HIND. A weight, a load.

BOJIDAN, the root of a small plant brought from Delhi to Ajmir; used as an aphrodisiac.—*Gen. Med. Top.*

BOKA. HIND. A basket, pail, or leather bag, for throwing water to a higher level. It is the source of the English word bucket.—*Ell.*

BOKAARA GAS. SINGH. *Gomphia angustifolia*, Vahl.

BOKADA. TEL. *Clerodendron viscosum*.

BOKARO, a coalfield of the Hazaribagh district of Bengal, covering an area of 220 square miles on either side of the Bokaro river. The quantity available is estimated at 1500 millions of tons. It is regularly worked.—*Imp. Gaz.*

BOKAT. HIND. *Asphodelus fistulosus*.

BOKENAKOO. HIND. *Zapania nodiflora*.

BOKHARA, a khanate in Turkestan, of small extent, surrounded by a desert. It lies between the parallels of lat. 37–43° N., and long. 60–68° E. It is an open champagne country of unequal fertility, and intersected by the Amu or Oxus on the southern border. Its rivers are the Amu or Oxus and Syr or Jaxartes, the Kohik or Zar-afshan and the river of Karshi and Balkh. It is ruled over by an Amir. The population was estimated by Irving (1809) at 3,600,000, by Burnes at 1,000,000, by Fraser at 2,500,000, and by Balbi (1826) at 1,200,000. A considerable portion of the khanate consists of a clayey, saline soil, and sandy steppes, with a visible slope to the south-west, while it is barricaded to the north-east by huge ranges of mountains. The prior occupants are the Tajak, whose time of immigration into Bokhara is unknown. Previous to the conclusion of the first century of the Hijira, the followers of Mahomed penetrated there, and forced them at the point of the sword to embrace the new creed. At that period Bokhara was governed by the Samanides. In the 10th century the weak rule of these princes was totally overthrown by the Uzbaks, whose power was not of long duration; for in the 12th century the khanate of Bokhara was deluged by the overwhelming flood of the Moghul hordes of Chengiz Khan, and the Uzbaks were driven by the Moghuls into the desert to the west of the Syr-i-Darya. Bokhara has often changed its rulers and modified its inhabitants. At each successive influx new tribes were added to the bulk of the population. This intermixture was more particularly felt whenever the Uzbaks re-entered the khanate. Of the Tajak there is but a remnant left in the city of Bokhara. Owing to their peaceful disposition, not to use the word cowardliness, they abstain from taking any part in warlike achievements. The most salient traits of their character are avarice, falsehood, and faithlessness. They are usually tall; have a white skin, with black eyes and hair. In their dress they strictly adhere to the rules of the Koran, and there is much greater affectation than is observable among the Uzbek. Their politeness in conversation often becomes disgusting, especially if they require the assistance of the person to whom they address their words. The number of the Arabs is somewhat greater than that of the Tajaks. They are chiefly dispersed over the northern parts of the khanate, having their headquarters in the vicinity of Vardanzi and Samarcand. They have not relinquished the habits of their ancestors, and continue to lead a wandering life, with this difference, that the severity of the climate has induced them to exchange their tents for the kikitki. Such only as are compelled by the nature of their occupation, live in fixed habitations. Their features betray their origin. Their large eyes are black as well as their hair; and their skin, which is very susceptible of the effects of the sun's rays, often becomes nearly black from exposure. They speak Arabic amongst themselves.

Bokhara has grain, fruit, silk, cotton, dyes, and cattle, all unrivalled of their kind. Their horses are celebrated throughout Asia; their camels surpass all the other sorts of this most useful domestic animal in the south and west of Asia; and their mutton is equal to any in the world. The hilly

country east and south of Samarcand is rich in minerals.

The Uzbek are undoubtedly the preponderating race in Bokhara, not so much from their number, as by the ties which bind them together. They are divided into stems and sections, like the Kirghiz, and have their elders or beys, who enjoy a certain consideration among them. The Uzbek branches, with some of their subdivisions, are enumerated in the work called Nassad-Mameti-Uzbekia. Many of their tribes are in this khanate.

Manghit encamp at different places, partly in the neighbourhood of Karshi, and partly near Bokhara, and it is out of one of its branches, called Tuk, that the reigning dynasty proceeds. Uzbaks are generally middle-sized men; the colour of their beards varies between a shade of red and dark auburn, whilst few are found with black hair. Their dress is very plain, consisting chiefly of khalat, or flowing dresses of alaja. The wandering Uzbek live, like the Kirghiz, in kikitki. The external felt is usually of a black or dark grey colour, but the interior is more tastefully ornamented than the tents of the latter; for the Uzbaks hang small carpets of home manufacture along the sides, and, though the work be coarse, and the colours generally of a sombre hue, dark red or brick colour in particular, their presence sets off the tent to advantage, and gives it an appearance of cleanliness. Their meals are very monotonous, the staple article being constantly mutton. Kumis (fermented mare's milk) is only drunk by those who keep large herds of horses. Their chief occupation consists in breeding flocks. Children all but naked are seen driving the sheep round the aul, while the chief sits listlessly in his kikitka, leaving all the household affairs to the care and management of the women, who do not differ in dress from the Kirghiz women. In the interior of the aul, half-naked children may be seen romping about and fighting with dogs.

Bokhara has a considerable number of Persians, especially Persian captives, who are brought thither in small parties. The greater majority, however, of this people were transplanted from Merv, in the reign of Amir Seyid, when that city fell under his sway. With a view of weakening it, and thereby ensuring his own safety, he ordered 40,000 families to be transported from Merv to the neighbourhood of Samarcand. It is from them the Persians of Bokhara chiefly descend.

The Persian population are easily distinguished by the regularity of their features and their bushy black hair. They profess outwardly the Sunni faith, though in their hearts they remain Shi'ah. The Jughli, Mezeng, and Luli are classed among Musalmans in Bokhara; their women go unveiled, and the men are careless in their religious duties. Numbers of them are established at Bokhara and other towns as medical men, fortune-tellers, and horse-dealers. Such as lead a wandering life encamp in tents of a coarse cotton stuff called bez. They have permission to halt near all the lakes and rivers of the khanate whenever those places are not previously occupied by Uzbaks; in consequence of which a great number of them are dispersed along the banks of the Zar-afshan, near Samarcand, while others encamp in the neighbourhood of Karakul. Bokhara and Samarcand are the centres of Mahomedan theology. There are no Mahomedans so strict as the inhabitants of

Bokhara, but it was the most shameless sink of iniquity in the east. They have a monastery at Bokhara, dedicated to the famous darvesh Mulana Jalal-ud-Din, who centuries ago went from Bokhara to Iconium. Its houses are built of mud and wood. The rooms have no furniture; and glass for windows is unknown, oiled paper being used in lieu. Bokhara and Turkestan send out raw silk of various kinds, called chilla jaidar, vardanzwi, lab-i-abi, churkhi, from Khokan, Balkh, Kunduz, Akcha, Shibarghan, etc. Bokhara gold coins are budki and tila. Broadcloth is little used, only cotton cloths (alaja), and stiff, loose silken garments. Women's clothes are of a dark colour, often blue, and fit tightly, with a horsehair veil.

Bokhara city, in lat. 39° 46' 45" N., long. 64° 26' E., is about 7 miles from the left bank of the river Zar-afshan. It is about 7½ miles in circumference, and is surrounded by a clay curtain, with bastions at intervals. It has about 15,000 houses, and a population of 75,000 souls. The ark or palace was built by Alp Arslan. The foreign traders have their respective caravansaries. It has numerous mosques, and about 140 schools and colleges. The inhabitants consist of the Tajak, Nogay, Uzbek, Arab, Jews, Persians, and a few Russians. The Jews are dyers and silk traders, and must wear a small cap and girdle around their waist, to be distinguished from the Mahomedans. There are merchants from Sind, and many darvesh. Whole streets contain nothing but shops and magazines for merchants from all parts of Turkestan, Kashgar, Hindustan, and Russia. There are, all around, numbers of country houses, with gardens.

The brothers Polo stayed three years in Bokhara in the time of Barak Khan (A.D. 1264-1274); and Anthony Jenkinson, who together with the brothers Johnson travelled in Central Asia as agent for Russian cloth manufactures, was in Bokhara A.D. 1558-59. It was visited in the early part of the 19th century by Sir Alexander Burnes, Dr. Joseph Wolff, Colonel Stoddart, and Captain Conolly. The two last fell victims to the fanaticism of the people. It was taken by Russia in 1868.—Wolff's *Bokhara*, ii. pp. 3, 4; *De Bode, Bokhara*; Vigne, *Personal Narrative*; Ferrier's *Journey*; Max Müller; *Porcell's Handbook*; *Trotter, Central Asia*.

BOKHARA CLOVER, *Melilotus*, a genus of plants of the nat. order Fabaceæ, several species of which, native and foreign, are grown in India, *Melilotus arvensis*, *italica*, *leucantha*, *officinalis*, *parviflora*, and *sulcata*. *M. arborea* is the Bokhara clover, and affords two or three cuttings in a season; most of them are grown as clover.

BOKHARA, LITTLE, a name of Chinese Tartary or Eastern Turkestan.

BOKHARI, one of the six principal collectors of the hadis or traditions of Mahomed. The other five collectors were, Muslim, Abu Daoud, Tirmidzi, Nasar, Ibn Maja or Ibn Khozeima. Bokhari was a takhallus or literary appellation. His real name and cognomen are Abu Abdullah Muhammad Ismail. He was born A.H. 194, and died A.H. 256.

BOKHARIAN HAKIM. See Gia-i-Khatai.

BOKHDI. See Aryan.

BOKHEE. DUKH. Hiptage madablota.

BOKKADI. TEL. Ehretia, *sp.*

BOKKENA. TEL. Zapania nodiflora, *Lam.*

BOKKUDU. TEL. Hydrocotyle Asiatica.

BOKLA. HIND. *Antennaria contorta*.

BOK-MAI-ZA. BURM. *Kydia calycina*.

BOKMO. URUA. *Cassipouia sappan*.

BOKSA, a forest tribe of the western parts of Rohilkhand.

BOKUR. MAHR. *Cardia Rothii*.

BOLA. BOLA. HIND. *Balsanodeudron myrrha*, *Nees ab Esen*; also myrrh.

BOLA. BENG. *Paritium tiliaceum*, *St. Hil.*

BOLA of Bengal, the fish *Corvinus chaptis*.

BOLAN, a pass in Saharawan in Baluchistan, 61½ miles long, leading through the Hala Mts. from Kutchi to Dasht-i-be-Daulat. It is a succession of valleys, bounded by mountains. The road is good over the bed of the torrent, from which large stones can be removed. It is better adapted for camels than horses or wheeled conveyances. It is the principal route for the traffic from Sind to Afghanistan. In 1838, the British Indian army, 13,030 strong, and Shah Shuja's army, 6070 strong, with 40,000 followers, marched through this pass. The water of the Bolan or Kahi river disappears in the shingle at Ab-i-gum, to reappear lower down. The British Indian army again, in the war of 1878-79, marched through the Bolan to Kandahar. The entrance is 800 feet; Ab-i-gum, 2540; crest, 5793 feet. Dr. Hunter says 8500 feet. Average ascent, 90 feet per mile.

The Bolan, with the Moolla pass far to the south, are the only practicable routes intersecting the great chain of mountains, defining, on the east, the low countries of Kutch Gandava and the valley of the Indus; while westward it supports the elevated regions of Kalat and Saharawan. There are many other passes over the chain, but all of them from the east have a steep and difficult ascent, and conduct to the brink of the plateau or table-lands. Such are the passes of Takari and Nagow between the Bolan and Moolla routes, and there are others to the N. of the Bolan. This pass is particularly important, as occurring in the direct line of communication between Sind and the neighbouring countries, with Kandahar and Khorasan. It also constitutes, in this direction, the boundary between the Sard Sair and Garm Sair. The natives say that all below the pass is Hind, and that all above it is Khorasan. This distinction is in great measure warranted, not only because the pass separates very different races from each other, speaking various dialects, but that it marks the line of a complete change of climate, and natural productions.—*Masson's Journeys*, i. p. 338.

BOLARUM, a military cantonment of the Hyderabad contingent, ten miles north of the city of Hyderabad in the Dekhan, continuing to the north of the Secunderabad cantonment. The force comprises a regiment of native cavalry, one of infantry, and a battery of artillery.

BOLBOPHYLLUM, a genus of plants belonging to the natural order Orchidaceæ. *B. auricomum*, *Careyanum*, *flexuosum*, *fuscescens*, *Jenkensonii*, *serpens*, and *suavis*, occur in Nepal, the Khassya hills, Burma, and Tenasserim. The most highly valued of the orchid order among the Burmese and Karens is a sweet-scented bolbophyllum, which Karen youths wear in the lobes of the ear, and maidens in their hair. It abounds in almost every part of the jungles, throwing down delicate straw-coloured racemes over the rough grey bark of old *Lagerstromia* trees. *B. Careyanum* is common in the vicinity of Moulmein, and easily

recognised by a long leaf at the apex of a false bulb, and by its small purplish flower.—*Mason*.

BOLE ARMENIAN, Berlin red.

Hajr-Armeni, . . . ARAB.	Harnzi, . . . PANJAB.
Bole de armenie, . . . FR.	Harnuchi, . . . "
Gil-armeni, . . . PERS.	Gurukatti, . . . SANSK.
Gheru mitti, . . . "	Sine kavi kalli, . . . TAM.
Tamam Poo, . . . JAV.	Sina kavi rai, . . . TEL.

An earthy mineral of a fine red colour, one of the hydrous silicates of alumina. That found in the island of Lemnos is white, and called Lemnian earth. Armenian bole is in use in India amongst native practitioners as an astringent; it is largely employed by fraudulent dealers to colour articles of food, etc. It is employed in native painting and gilding. In many countries, Bengal and South America especially, this and other unctuous earths are eaten occasionally by pregnant women, to allay the craving for food so common in that state; and in times of scarcity it has been used by both sexes as a mechanical substitute for proper food. It consists of alumina, silica, magnesia, and oxide of iron. It is brought to India from the Persian Gulf; but it also occurs of fine quality in the Rajmahal hills, also in Mysore, Bellary, and other localities. Reduced to very fine powder, it is used as an absorbent application, sprinkled over ulcers or other raw surfaces. The boles of Blois, Silesia, Lemnos, Armenia, and other places are celebrated. They do not effervesce with acids; are astringent, contain silicate of alumina, and a varying proportion of iron and magnesia. The red varieties are called Armenian bole, and the white varieties are Lemnian earth.—*O'Sh.*; *Smith*.

BOLEDI, a tribe of Arab descent in the Kaj district of Baluch Makran. They were in brief authority in the early part of the 17th century.

BOLEOPITHALMUS BODDERTII, the leaping fish of the seas of the E. Archipelago. They are salamandrine-looking creatures, scarcely distinguishable from the mud on which they lie, but make a series of leaps on being alarmed. They are 3 or 4 inches long, wedge-shaped, with flat pointed tails, head, and prominent eyes. They are called by sailors Jumping Johnnies. They leap by means of their ventral fins.—*Collingwood*.

BOLETUS DESTRUCTOR, dry-rot fungus.

BOLETUS IGNIARIUS, Agaricus albus.

Buti ka Mochka, CHENAB.	Gharikan, . . . PERS.
Jangli Bulgar, . . . KASHM.	Kiain, . . . PANJAB.

B. igniarius, dried and sliced, is the amadou or German tinder.—*Eng. Cyc.* See Fungi.

BOLINTRABOLUM. TEL. Bol ka gond, and Bija bol, HIND. A dark, reddish-yellow opaque gum-resin, appears to be true myrrh. It is considered a warm medicine; is given to children in enlarged abdomen, mixed with aloes, as a deobstruent, and is also used in making native ink; one seer costs eleven annas.—*Gen. Med. Top.*

BOLKUKRI. BENG. *Adolia castinacarpa*.

BOLO CHAPTIS. *Buch. Corvinus bola*, *M'Clell.* *Corvinus chaptis*. A whiting that furnishes isinglass; the jawbone of the fish is described as Boalec.—*Mason*. See Bola.

BOLOR MOUNTAINS, the mountains of Balti, extend for 300 miles, from the sources of the Gilgit and Yasan rivers in 73°, to the 77th degree E. long., the source of the Nubra river. The Bolor mountains form the western boundary of Chinese Turkestan and Dzungaria. Bolor pro-

Juces much gold. The higher mountain range abounds in rock-crystal, called Bilor-stone. The people of the neighbouring Dardu districts on the Indus know Balti only by the name of Palolo. Balti is still famous for its gold washings. Ptolemy calls the people *Βύλται*, or *Byltæ*.—*Yule*.

BOLSARI. DUKH. *Minusops elengi*.

BOLUNGEE and BANSO. TEL. ? URIA. ? Two rare bamboos of Ganjam and Gumsur; extreme height 25 feet, circumference $\frac{1}{2}$ foot.—*Captain Macdonald*.

BOLWAN, amongst the Mahrattas, the ceremony of conducting a bride to her husband's house; also dismissal of the bridegroom's friends and attendants. Also, the ceremony of propitiating the Bhuta or spirits of deceased persons (pestilence) who have entered a village, inducing them to leave the village, and conducting them across the borders with music and a procession. The exercise of the Bolwan is a cause of great anger to the villagers to whom the pestilence is led. Perhaps from *bulāna*, to call.—*Wilson*.

BOM or *Bun-zu* or *Bom-du* are closely allied tribes, termed collectively *Lungka*, *Kungye*, or *Kuki*, who occupy the highlands of Tiperah, and extend S.E. towards the head of the Koladyu. Both the *Bun-zu* and *Kuki* appear, like the *Ku-mi*, to belong to the Burman family. The *Kuki* represent its most archaic and barbarous condition. The tribes that have been exposed, on the seaboard of Arakan or in the basin of the Irawadi, to the influence of the Chinese, Shan, Mon, Bengali, and more distant commercial nations, have attained a comparatively high civilisation. The *Singpho*, although much behind the *Burmans*, are greatly in advance of the *Kuki*; and the *Burmese* seem, at a very ancient period, when their condition was similar to that of the *Kuki*, and perhaps in many respects more barbarous, to have spread themselves from the upper Irawadi to the south and west as far as the highlands of Tiperah on the one side, and Pegu on the other. Wherever the stock from which they have been derived was originally located, they probably first appeared on the ultra-Indian ethnic stage as a barbarous Himalayan tribe, immediately to the eastward of the *Mishmi*, if indeed they were not identical with the *Mishmi* of that era. The upper Irawadi was probably then occupied by the *ruder* and inland tribes of the *Mon-Anam* alliance.

BOMA-PAPATA. TEL. *Stylocoryne Weberi*.

BOMBACEÆ. Several genera of this group of plants, as the *Adansonia*, *Bombax*, *Durio*, *Ochroma*, *Gossampinus*, and *Salmalia*, grow in the East Indies. *Salmalia Malabarica* and *Gossampinus* have a soft down attached to their seeds, and yield a powerful bast. Some authors regard this group as a section of the *Sterculiaceæ*.

BOMBARECK, a rock which British sailors so call. It is the *Koh-i-mubarak*, also *Ras-mubarak*, the fortunate or auspicious mountain, or headland, of the Arabs.

BOMBARIMASA. TEL. *Citrus decumana*.

BOMBAX CEIBA. Linn.

Muh-mien, . . . CHIN. | *Pan-chi-hwa*, . . . CHIN.

A tree of Jamaica introduced into the E. Indies. In South America and the West Indies it is used for canoes. It is common at Canton; and the fleshy petals of the flowers are sometimes prepared as food. It is said to be a large tree of the Burmese country, and its beautiful and soft floss

is used for pillows and thin mattresses by the natives. The juice of the root is aperient, and its bark emetic.—*Voigt*; *Malcom's Travels*, i. p. 187; *Riddell*; *Williams's Middle Kingdom*, p. 284.

BOMBAX MALABARICUM. D. C.

Bombax heptaphyllum, Cav.

Salmalia Malabarica, Sch. and Endl.

Gossampinus rubra, Ham.

Rakto-simal, BENG., HIND.	Supi,	PANJ.
La-i; Lepan, . . . BURM.	Kattu imbal, . . .	SINGH.
Burrul, mara, . . . CAN.	Ilavam,	TAM.
Red Cotton Tree, . . . ENG.	Buruga manu, . . .	TEL.
Simal, HIND., PERS., SANSK.	Mula-buraka manu, . .	"
Sair; Sairi, . . . MAHR.	Buro,	URIA.
Mulu-elavu, . . .	MALEAL.	

This large and stately tree grows in most parts of British India, and is often from 80 to 100 feet to the first bough. It occurs wild in the Siwalik tract up to 3500 feet, and beyond the Indus, and up to 6000 near the Ravi; and its wood is used there for planks, boxes, water conduits, well curbs, troughs, bridges, and scabbards, and light work, its wood being whitish, coarse-grained, weak, brittle, and very subject to the attacks of white ants, but it stands water well. In the Bombay Presidency, both on the coast and inland, it is one of the most common trees, and the planks are extensively used in making the light packing-boxes used in the export of bulky goods from Bombay and other places; also for fishermen's floats when the *Adansonia* is not at hand, and for canoes. It is abundant in the plains of British Burma, where its light and loose-grained wood is used for coffins. A cubic foot weighs 28 lbs. When the trees grow large, the stem spreads out towards the base, at intervals, into buttress-like projections. In spring, huge Magnolia-shaped scarlet blossoms cover the trees, and in some places the young flower-buds are cooked and eaten. Its cotton is used for stuffing cushions and pillows. In a full-grown tree on good soil, the average length of the trunk to the first branch is 60 feet, and average girth measured at 6 feet from the ground is 15 feet. It yields the *Moochee-ras* resin, and its roots constitute the *Safed Moosli* of the bazars, which, powdered, forms a thick mucilage with cold water, and answers admirably as a nutritious demulcent for convalescent persons.—*Drs. Wight, Brandis, Gibson, O'Shaughnessy, Stewart*; *Mr. Thompson*; *Captain Beddome*.

BOMBAY city, in lat. 18° 55' 5" N., and long. 75° 53' 55" E., is situated on an island of that name, with an area of 18.22 square miles, and gives its name to a presidency under the rule of a Governor and Council; also to the army which holds the Bombay territories and the peninsula of Aden; also to the small naval force of the Bombay Marine; and likewise to a group of islands off the Bombay shore. The English name is a changed form of *Mumbadevi*, a local Hindu goddess. The countries under the Bombay government present markedly differing features, alike in their physical aspect, in the races occupying them, and in the languages that they speak. In the times preceding and following the Christian era, portions of the territories under notice were distinct nationalities,—*Kat'hiawar*, *Maharashtra*, *Gujarashtra*, *Saurashtra*, and *Sindhu*; and a powerful ancient dynasty seems to have had their capital at *Wallabhi*, in the modern *Gohilwad*, another being the great *Chalukya* empire of the *Dekhan*, in the *Dekhan* part of the *Bombay* territories, on a

portion of the plateau between the rivers Nerbadda and Kistna, elevated about 1700 feet above the sea. What is known of the history of these regions while under their early rulers is chiefly derived from legends handed down by traditions relating to the various sectarian religions that were acknowledged, and by the architectural and sculptured remains and rock-inscriptions, which Colonel James Tod, Mr. James Fergusson, Colonel Sykes, Mr. James Prinsep, General Cunningham, and Mr. James Burgess have investigated. But since the time of the Arab, Turk, Moghul, and Pathan conquerors, all of them Mahomedans, and all of them creditably recording races, followed by the Portuguese, the Dutch, and the British, the eventful changes in these countries have been well known. The first of these, after the Scythic and Rajput occupancy, was Mahmud of Ghazni, who in 1024-6 captured and sacked the Saiva temple of Somnath in Gujerat, carrying back with him immense booty. From that time, the Rajput rulers of Gujerat, whose capital was at Anhalwara Patan, had to meet waves of invasion, until their dynasty was at last subverted in 1297 by Alaf Khan, the general of the Turki emperor of Dehli, Ala-ud-Din Khilji. In 1403, Jafar Khan, a Rajput convert, assumed independence, and the dynasty advanced to high power and splendour. The annual revenue rose to 11 millions sterling; and the ruins still at Ahmadabad and Champanier bear a mournful testimony to its former greatness, and to the revolutions to which it has since been subjected; for, in 1573, Gujerat was conquered by the emperor Akbar, and has repeatedly since then changed masters. The Bahmani kings, 1347-1526, the Nizam Shahi dynasty in 1490-1595, at Ahmadnaggur, the Adal Shahi, 1489-1579, at Bijapur, the great Sivaji, 1627-1674, carved out kingdoms for themselves; and on the death, in 1707, of Aurangzeb (Alamgir I.), the disorders led, in 1757, to the cession of the Gujerat Province to the Mahrattas, under the joint rule of the Peshwa and Dunaaji Gackwar. While such changes were occurring in these northern tracts, natives of western Europe had appeared on the southern seaboard,—Vasco da Gama, a Portuguese leader, in 1498; the great Albuquerque, 1503, and that nation was in possession of Bombay island in 1532. A ship from England visited Surat in 1608; and the English in 1613 obtained permission from the emperor Jahangir to erect a factory there, which in 1618 was also granted to the Dutch. In 1661 the Portuguese gave Bombay island to Charles II. of England, as part of the dowry given with his bride; and Charles sent the Earl of Marlborough, a most experienced sailor, with a strong fleet, to receive it from the Portuguese. In 1668 Charles transferred it to the English East India Company, for an annual rent of £10. In 1686 it was declared the chief seat of the English on that side of India; and in 1708 the territories attached were created the Bombay Presidency. All that remains of the Portuguese power on that coast is the territory of Goa, Daman, and Diu, an area of 1146 square miles, and 428,955 inhabitants.

Since the middle of the 18th century, the Bombay Presidency has been sometimes aggressive, sometimes on its defence. In 1756, in alliance with the Peshwa, the stronghold of Savandrug was captured, and the same year Admiral Watson and Clive stormed Gheria or Viziadrug.

The first war with the Mahrattas, 1774-1782, ended ingloriously, some districts being retained and some delivered up. In the second war, 1802, the British regained some tracts in Gujerat; and in the third war, 1817, the Peshwa Baji Rao was defeated in the Dekhan, and the greater part of what is now the present Bombay territories, Ahmadabad, Nasik, Ahmadnaggur, Poona, Belgaum, Dharwar, Kaladgi, Sholapur, and the Konkan, fell to the British. At the same time Kandesh was obtained from Holkar. In 1843 Sind was conquered. In 1848 Sattara lapsed from want of heirs. In 1860 Sindia ceded the Panch Mahals; and in 1861 North Canara was transferred from the Madras Presidency. The territory thus noticed lies between lat. 13° 53' to 28° 47' N., and long. 66° 43' to 76° 30' E. Its seaboard, and the rivers Indus and the Gulfs of Cutch and Cambay, 8000 square miles, and the harbours of Bombay and Karwar afford every facility for commercial operations. Its fertilizing rivers being the Mahi, Sabarmati, and Tapti; and its mountains, the Suliman in Sind, the Sahyadri, the Satpura, and the Satwala or Ajunta, are marked features in the landscape. The Manchur lake is on the right bank of the Indus, near Sehwan, and the Kan or Rumi, is a level tract partially flooded during the rainy season of the S.W. monsoon. Thurr and Parkur, in Sind, is a sandy desert. The desert talukas of Omerkot consist of a narrow strip of sandhills and waste lying north of the Runn of Cutch, and stretching about 130 miles from District Mahomed Khan's Tanda on the west, to the Jodhpur frontier on the east. The principal town is Omerkot, situated between the desert and the plains. It has long been the acknowledged capital of that part of the country, and with its mud fort was considered the key to the desert commanding the high road between Marwar and Sind.

Aden is under the jurisdiction of Bombay. Almost the most southerly point on the Arabian coast. It is situated in lat. 12° 47' N., and long. 45° 10' E. It is a peninsula of about 15 miles in circumference, of an irregular oval form, 5 miles in its greater, and 3 in its lesser diameter, connected with the continent by a low narrow neck of land, 1350 yards in breadth, but which is in one place nearly covered by the sea at spring tides.

Bombay city in 1872 had 644,405 inhabitants. In 1881 the number was 773,196. The island has two hills of very moderate height, which rise from low lands formerly liable to be flooded. A stone embankment called the Vellaurd was built in 1833-34, to connect the Colaba and the Bombay islands. Malabar Hill is on the south-western side of Bombay island. At the north is Mahalakshmi, a ridge 200 feet high, with a handsome Hindu temple. About its centre are the Parsee dokhmas, or exposure towers. At the south end is Walkeshwar, a Brahman village, with interesting temples. Malabar Point, or Shirgundi, its south extreme, forms the north-west limit of the Back Bay. Back Bay lies between Malabar Hill and Colaba, is 2½ miles wide, and unsuccessful efforts to reclaim it have been made.

The Bombay group, indeed, consists of fifteen or twenty islands in all,—the island of Bassein, about thirty miles to the northward of that which gives the cluster its name; Dravee and Versova, just off the shore of Salsette; Salsette, by much the largest of them all; Trombay, conspicuous for

the mountain called Neat's Tongue, which attains the altitude of 1000 feet; Bombay itself, united on the northward to Trombay and Salsette, as these are united to each other by bridges and embankments, and to the southward are Old Woman Island and Colaba. Henery and Kenery are far south. In the spacious harbour formed by the islands of Caranja, Colaba, Bombay, Salsette, Elephanta, Trombay, and the continent, several smaller rocky islands are scattered, bearing different names. Of these are Elephanta, and Butcher Island, called Dipa-devi, or the island of the gods, or holy island; it is low, less than a mile from Elephanta, in the direction of Salsette. Bombay harbour is very capacious, being from N. to S. 8 or 10 miles, with a general width of from 4 to 6 miles; its shores are irregularly indented by bays and inlets. Bombay Island has five or six bands of trap rock, chiefly greenstone and amygdaloid, separated by beds that have an appearance of being of sedimentary origin. The sea-breeze is felt through the island: the anchorage extends along the eastern face; and it is along this face of the island that the most densely crowded parts are. Owing to the value of property in that quarter, much new land has been reclaimed from the sea. The chief public buildings are the fort, the town hall, the government house, museum, and docks.

For administrative and revenue purposes, the Bombay Presidency is arranged into twenty-four districts, which enclose nineteen Native States under British protection. In 1881 the population of Bombay was 14,025,593, and that of Sind 2,401,934; the Native States, 6,831,505.

British Territory, 124,465 sq. m.; pop. 16,349,206, viz.:—

Area.	Pop.	Area.	Pop.
Kandesh, 10,162	1,028,612	Sattara, . . .	5,378 1,116,050
Nasik, . . .	8,140 734,386	Sholapur, . . .	3,925 662,986
Ahmad-nagpur, 6,647	773,938	Belgaum, . . .	4,592 938,750
Poona, . . .	5,009 907,235	Dharwar, . . .	4,565 988,037
Konkan, 13,580 sq. m.	pop. 3,259,776, viz.:	Kaladgi, . . .	5,696 816,037
Canara, . . .	4,235 398,406	Bombay City, . . .	22 644,405
Ratnagiri, 3,789	1,019,136	Tanna, . . .	4,052 847,424
Colaba, . . .	1,482 350,405	Gujarat, 10,082 sq. m.	pop. 2,810,522, viz.:
Surat, . . .	1,588 607,087	Panch Mahals, 1,731	240,743
Broach, . . .	1,358 350,322	Ahmadabad, . . .	3,844 829,637
Kana, . . .	1,561 782,733		

Sind, 46,599 sq. m.; pop. 2,192,415, viz.:

Kurachee, 14,091	423,495	Thar and Parkar, 12,729	180,761
Hyderabad, 9,053	721,947	Upper Sind, 1,913	89,985
Shikarpur, . . .	8,813 776,227		
<i>Native States</i> , 67,370 sq. m.	pop. 6,831,505, viz.:		
Cambay, . . .	350 83,494	Narukot, . . .	143 6,837
Cutch exc. of . . .		Palanpur, . . .	8,000 502,586
Rum, . . .	6,500 487,305	Pant, . . .	960 47,033
Jangira, . . .	325 71,996	Rewa, . . .	
Jawar, . . .	535 37,406	Kanta, . . .	4,793 505,732
Kattyawar Agency, 20,338	2,312,629	Sattara, . . .	
Khairpur in Sind, 6,109	127,000	Jagirs, . . .	3,508 417,295
Kandesh, . . .		Sawant Wari, . . .	900 190,814
Petty St., 3,840	39,111	Sawaur, . . .	70 17,288
Kolapur, . . .	3,184 802,691	S. Mahratta Jaghirs, 2,734	610,434
Mahi Kanta Agency, 4,000	447,056	Surat Agency, 1,082	124,808

The total area is 191,835 square miles, and the population 23,180,721?

The various castes and sects in the British dis-

tricts professing Hinduism, number— 12,606,004 and Mahomedans, . . . 2,504,338 others, . . . 185,409 But of these, 163,972 are descendants of races from beyond the British frontier,—Arab, Baluch, Makran, Persia, and Egypt. The aboriginal races of this part of India, Koli, Bhil, Kolamb, Ahir, and others, are given as 709,025. The number of castes was about 200; and the Sudra were returned, in 1872, as 10,801,393; these being chiefly the cultivators of the Kunbi and Mali sections.

In 1716 the population of Bombay Island was estimated at . . . 16,000 on 1st May 1849, it was . . . 556,119 and in 1872, . . . 644,405 as under:—

Hindu Sudras, . . .	340,868	Bhattia, . . .	9,466
Mahomedans, . . .	137,644	Europeans, . . .	7,253
Parsees, . . .	44,091	Jews, . . .	2,669
Hindu out-castes, . . .	31,347	Eurasians, . . .	2,352
Brahmans, . . .	25,757	Lingact, . . .	1,242
Native Christians and Portuguese, . . .	25,119	Negro Africans, . . .	1,171
Buddhists or Jains, 15,121		Chinese, . . .	305

The vernacular languages spoken are English, Canarese, Kokani, Gujarati, Mahratti, Sindhi, and Urdu.

Several of the races are keenly engaged in trade and in banking. Amongst the Hindus, the Bhattia race and the Marwari, Rajput tribes from Central India, and the Banya of Gujarat; amongst the Mahomedans are the Khoja, Borah, and Memon sects; the Lohani of Sind and the N.W. Frontier; with commercial men from Europe and America, Egypt, Arabia, Africa, and Persia, the Parsee (66,498), and a small number of Jews. The Khoja are converts from Hinduism to the Ismaili sect of Mahomedanism, and acknowledge the Imam of the Ismaili as their spiritual head. They have large trading colonies along the east coast of Africa. Cotton, opium, salt, cereals, are the chief articles of the foreign trade; for domestic use, the principal arts and manufactures are, cotton-weaving by hand and steam, cotton thread, woollen fabrics, rugs, carpets, working in leather, gold and silver, and silk lace, kinkhabs or brocades, silk fabrics, embroidery, edgings, paper, pottery, carving from sandal-wood, blackwood, ebony, etc., Bombay or Multan work, and blackwood furniture.

The land-revenue system is the Rayotwari, not, as in Madras, with annual fresh assessments, and the cultivator is part owner of the land. The Government rates levied are Rs. 0-12-7 per acre on dry crops, Rs. 3-9-3 on rice lands, and Rs. 3-11-4 on garden lands. Each village has its potail, who is the head of the village for both revenue and police purposes; the tullati or kulkurni, who is the clerk and accountant; the mhar, who is a kind of beadle; and the watchman. The potail and kulkurni either hold a certain quantity of rent-free land, or are remunerated by a cash payment equivalent to a certain percentage on the collections. The mhar and watchman, in common with the other village servants, also hold land on more or less favourable terms as regards assessment, and receive, besides, grain and other payments in kind from the villagers.—*Imp. Gaz.; Horsburgh; Finlay; Census Report.*

BOMBAY DUCK.

Bummalo of . . . BENGAL. | Bamia of . . . BOMBAY. This little fish, *Saurus nehereus*, *B. Ham.*, in-

habits the seas of the S.E. of Asia. Its total length is 11 inches. The upper part of its head, back, and sides, light grey or dust-coloured, semi-transparent like gelatine, with minute starlike black and brownish dots; anterior part of abdomen pale silvery bluish; rest whitish; cheeks and opercles, pale silvery bluish, dotted like the body; fins transparent, coloured like the body, but more closely dotted, so as to appear blackish. The fish is of most voracious habits, gorging itself with other fishes of nearly its own size, also with its own species and with prawns. It is frequently taken with the stomach and the jaws expanded with prey. It is very short-lived. The whole body becomes at certain seasons brilliantly phosphorescent. In the Straits of Malacca it is at all times very numerous, although less so than it is at the Sandheads or in the mouths of the Ganges. Although very rich, it is a great delicacy immediately after it is taken. Salted and dried, it is also highly valued; and in this state large quantities are annually exported from Bombay and the Malabar coast to all parts of India.

BOMBAY MARINE. See Indian Navy.

BOMBAY WORK. The inlaid work of ivory, white and dyed, of ebony or other coloured woods, for which Bombay has long been famous, is said to have been introduced from the Panjab, and is also familiarly known as Multan work. The art dates from a remote period, and paper-cutters, work-boxes, writing-desks, and similar articles are its chief products. The effect of a large mass of it is very poor; the pattern is too fine for being distinguishable, and it fills the eye with a general greyish tint. In articles which do not present more than a foot or two of surface, it is very pleasing. The ground of the inlaid pattern is generally scented cedar or sandal-wood, the joinery exhibited in which is very indifferent. The inlaying material is prepared as follows: The wood or ivory is cut into slips of a lozenge or triangular section, as may be required, by a long, thin-bladed, fine-toothed saw. The tin is drawn through betwixt a pair of grooved rollers, like those used for laminating or extending iron; they work together by teeth at the extremity. One or two draws through extends the metal into the length desired. The wires and splints are nearly all either lozenge-shaped or triangular, the triangles being equilateral, the lozenges composed of two equilateral triangles. A pattern being fixed on, the splints are built up into pieces about eighteen inches long, and from a quarter to two inches in thickness, firmly glued together. In the case of borders, or continuous pieces of work, the rods are glued together betwixt pieces of ivory, or wood and ivory alternately, so as to form straight lines on each side of the pattern. When about to be used, they are sawn across the thickness of a sixpence, and arranged in a box divided into compartments, something like a printer's case. They are then picked up in succession, and applied with glue to the box or other article to be inlaid.

Work-boxes, Rs. 4 to 125	Card-cases, Rs. 1.8 to 5
Writing-desks, 4 „ 75	Paper-weights, . 1.8 „ 3
Portfolios, . 6 „ 18	Paper-cutters, . 0.8 „ 3
Watch-stands, 5 „ 8	Table trays, . 10 „ 15
Do. cases, . 3 „ 6	Pincushions, . 3 „ 5
Envelope cases, 8 „ 25	Inkstands, . 10 to 20
Baskets of sizes, 3 „ 20	Jewel boxes of sandal-wood, 6 „ 50
Do. open work, 5 „ 10	Paper stands, do., 5 „ 8
Cheroot cases, . 3 „ 4	

BOMBAZINE, a fabric of worsted and silk, the warp being of silk, and the weft or shoot of worsted.—*Tom.*

BOMBYA, at Gaya, a guide-conductor who precedes Hindu pilgrims, making a noise by beating his mouth.

BOMBYCINA, a group of lepidopterous insects, which, in their metamorphosis, construct a covering or case, generally called a cocoon. Each tribe of the Bombyces produces a cocoon of a peculiar form. They are said to spin or weave their cocoon, and are usually styled silk-moths. The valuable product of the silk-moth is the cocoon; and races have been produced differing much in their cocoons, but hardly at all in their adult states. Several distinct species exist in China and India, some of which can be crossed with the ordinary silk-moth, *Bombyx mori*. This is believed to have been domesticated in China B.C. 2700. It was brought to Constantinople in the 6th century, whence it was carried into Italy, and in 1494 to France, and has since been transported to many countries, where food and selection have produced many varieties. It is only in some districts of each country that eggs come to perfection. Captain Hutton was of opinion that at least six species have been domesticated. *B. Cynthia* feeds on the castor-oil plant, and spins very soft threads. Eastward of the city of Canton, on a range of hills called Lo-fau-shan, there are butterflies of large size, and night-moths of immense size and brilliant colouring, which are captured for transmission to the Chinese court and for sale. One of these, the *Bombyx Atlas*, measures about 9 inches across; the ground colour is a rich and varied orange-brown, and in the centre of each wing there is a triangular transparent spot, resembling a piece of mica. In their scientific classification, the Bombyces are arranged into eight stirpes or types, according to the forms of their larvae, and those known to occur in India have been classed into 105 genera and 272 species. The most important of these, in a social point of view, are the silk-producing moths, belonging to the genera *Bombyx*, *Cricula*, *Salassa*, *Antheraea*, *Actias*, *Saturnia*, *Attacus*, *Caligula*, *Neoris*, *Ocinara*, *Rhodina*, *Rinaca*, *Theophila*, and *Trilocha*. At Simla, nine species of *Bombyx*, *Saturnia*, and *Actias* occur, nearly the whole of which might be turned to account in producing silk.

1. *Bombyx mori*, *Linn.*, the common domesticated or Chinese silk-worm moth, the *Sericaria mori* of Blanchard, and the 'pat' of Bengal. It is a native of China, but has been domesticated there and in Siam, India, Persia, France, America, and Italy. The tradition in China is that this was discovered B.C. 2640, in the reign of the emperor Hwang-Te, by his queen. The culture now flourishes principally about Nankin, in lat. 32° N.; but in India, into which it was early introduced, none of the silk filatures extend beyond 26° N. They have been found in a wild state in Kent in England, on shrubs, but the mulberry tree leaves are its favourite food.

2. *Bombyx religiosa*, *Helfer*, *Deo-mooga*, *HIND.*, *Joree*, *HIND.*, is found in Assam and Cachar, but is supposed by Mr. Moore to be identical with *B. Huttoni*. This feeds on the *Ficus Indica* and *Ficus religiosa*. Its cocoon shows the finest filament, has very much lustre, is exceedingly smooth to the touch, and yields a silk, if not superior, yet

certainly equal to that of *B. mori*. It has not been domesticated.

3. *Bombyx luttoni*, *Westwood*, is found in the Himalaya, about Mussoori, where it occurs abundantly from the Doon up to at least 7000 feet. It feeds on the leaves of the wild mulberry, and breeds twice a year. It has not been domesticated, but feeds on the trees. It spins its cocoon on the leaf, which is enclosed; the silk is very fine, and of a very pale yellow tint. It is found in the Western Himalaya in great profusion, at elevations of 3000 to 8000 feet above the sea-level. It occurs in the height of the rainy season, when the hills are enveloped in dense mists. Its eggs are deposited on the trees, and subjected to the influence of the frosts and snows of those mountain winters. The Agricultural Society of India declared that silk of the very best description can be obtained from its cocoons by careful reeling. The silk is fine and tough, though perhaps somewhat less soft and silky to the touch than that of the Chinese worm, and was valued by the Delhi shawl merchants at 25s. the pound.

4. *Bombyx Horsfieldi*, *Moore*, Java.

5. *Bombyx sub-notata*, *Walker*, Singapore.

6. *Bombyx lugubris*, *Drury*, Madras.

7. *Bombyx yama mai*, the oak silk-worm of Japan, has been naturalized in England. In Japan it is the most precious for the produce, and is a monopoly of the royal family. The cocoons are of a beautiful yellowish-green colour. The silk is as fine, thin, and light brown as that of the mulberry worm.

8. *Bombyx Pernyi*, of the north of China. It produces the gridelin cocoon and silk.

9. *Bombyx Mylitta*, of India, produces a large cocoon. It feeds on the leaves of the *Rhamnus jujuba*, and furnishes a dark-coloured or grey silk, coarse but durable, inferior to that of the *B. yama mai*. Other species are *B. Arracensis*, *fortunatus*, *sinensis*, and *textor*.

10. *Cricula trifenestrata*, *Helfer*, has been arranged under the genera *Saturnia*, *Euphranor*, *Antheræa*, and *Phalæna*. It occurs in N.E. and S. India, in Sylhet, Assam, Burma, and Java; and feeds on the *Protium Javanum*, *Canarium commune*, *Mangifera Indica*, and *Anacardium occidentale*. Its cocoon is constructed like network, through which the enclosed chrysalis is visible. It is of a beautiful yellow colour, and of a rich silky lustre. *C. drepanoides* also occurs.

11. *Salassa lola*, *Westwood*, formerly in the genera *Saturnia* and *Antheræa*, occurs in Sylhet.

12. *Antheræa paphia*, *Linn.*

Kontkuri Muga, . . . ASSAM.	Koli-surrah, . . . MAHR.
Buglii, BIABHUM.	Munga, MICH.
Tasseli, HIND.	

This has been classed in the genera *Phalæna*, *Saturnia*, *Bombyx*, and *Attacus*. It is known to occur in Ceylon, S. India, N.W. and N.E. India, Bengal, Behar, Assam, Sylhet, and Java. It feeds on the *Shorea robusta*, *Zizyphus jujuba*, *Terminalia alata*, *T. catappa*, *T. glabra*, *Bombax heptaphyllum*, *Tectona grandis* or teak, and the mulberry or *Morus Indica*. The insect has not been domesticated, but is watched on the trees, and, in parts of India, is found in such abundance that the people from time immemorial have been supplied with a very durable, coarse, dark-coloured silk, which is woven into the well-known tassar silk cloth. In the Bhagulpur district the cocoons

are collected in cartloads, and are much used, cut into thongs, as ligatures for binding the matchlock barrel to the stock. In the rainy season the perfect insect appears from the cocoon in about twenty days. But tassar moths are hatched twice in the year, in May and August. The caterpillar first draws a few leaves together, as if to screen itself from observation, and then spins a strong cord, composed of many threads, till about the thickness of a crow quill, at the end of which it weaves the cocoon. For the first 36 hours the cocoon is so transparent that the larva can be seen working within; but it soon acquires consistence, and is then rendered quite opaque by being covered with a glutinous substance. The moth generally deposits its eggs within a few yards of the cocoon. These the villagers collect and keep in their houses for about ten days, until the young caterpillars come forth, when they are placed on the Asan trees in the jungles, and in eight or ten days more they prepare for change to the chrysalis state. The owners tend them carefully, to protect them from the birds by day and from bats at night, and practise many superstitious ceremonies to aid them in their care.

13. *Antheræa Pernyi*, *Guerin*, syns. *A. Mylitta*, *Saturnia Pernyi*, is a native of China.

14. *Antheræa Frithii*, *Moore*, Darjiling.

15. *Antheræa Roylii*, *Moore*, Darjiling.

16. *Antheræa Java*, *Cramer*, syn. *Bombyx Java*, found in Java.

17. *Antheræa Perottetti*, *Guerin*, syn. *Bombyx Perottetti*, found at Pondicherry.

18. *Antheræa Simla*, *Westwood*, occurs at Simla and Darjiling. Its expanse of wings is nearly six inches.

19. *Antheræa Helferi*, *Moore*, Darjiling.

20. *Antheræa Assama*, *Helfer*, the *Saturnia* of *Westwood*, the *Mooga* or *Moonga* of the Assamese, is found in Ceylon, Assam, and Sylhet. It can be reared in houses, but thrives best when fed on trees; and its favourite trees are the Addakoory tree, Champa (*Michelia*) Soom, Kontoolva, Digluttee, and Souballoor, *Tetraneura diglottica* and *T. macrophylla*, and the *Pattee shoonda* or *Laurus obtusifolia*. There are generally five broods of *Moonga* worms in the year.

21. *Antheræa larissa*, *Westwood*, syn. *Saturnia*, a beautiful species, found in Java.

22. *Antheræa* —? *sp.* This is a native of Manchuria, in a climate as rigorous as that of Britain. It feeds on a species of the oak. Its silk is strong, with little lustre, and resembles strong yellow linen. Introduced into France. *A. Andamana* and *A. mezankeoria* are also named.

23. *Loepa katinka*, *Westwood*, syns. *Saturnia*, *Antheræa*, native of Assam, Sylhet, Tibet, Java. Others are *L. miranda*, Sikkima, and Sivalika.

24. *Actias selene*, syns. *Tropæa*, *Plectropteron*, *Phalæna*, a native of India, at Mussoori and Darjiling, from 5000 to 7000 feet. It feeds on the *Coriaria Nepalensis*, or *Munsuri*, HIND., the walnut, *Andromeda ovalifolia*, and *Carpinus*. The eggs are laid for a few days after the visit of the male; they hatch in about 18 days, and the larva begins to form its cocoon when 7 weeks old.

25. *Actias Mænas*, *Doubleday*, syn. *Tropæa*, a native of Sylhet.

26. *Actias Sinensis*, *Walker*, syn. *Tropæa*, a native of N. China. Others are *A. ignescens* and *A. leto*.

27. *Saturnia pyretorum*, *Boisduval*, China.

28. *Saturnia Grotei*, *Moore*, Darjiling.

29. *Attacus Atlas*, *Linnaeus*, syns. *Phalæna*, *Bombyx*, *Saturnia*. This is the largest of all known lepidopterous insects. It is found in Ceylon, all over India, Burma, China, and Java, and the tassar silk of the Chinese is said to be obtained from its cocoon.

30. *Attacus Edwardsi*, *White*, a native of Darjiling, of an intensely dark colour.

31. *Attacus cynthia*, *Drury*, syns. *Phalæna*, *Bombyx*, *Samia*, *Saturnia*. This is the Eri, Eria, or Arindi silk-worm of Bengal and Assam, which occurs also in N.E. India, Tibet, China, and Java. It feeds on the foliage of the *Ricinus communis*, the castor-oil plant, hence its name, the Arindi. It spins remarkably soft threads.

32. *Attacus ricini*, *Boisduval*, syns. *Saturnia* and *Phalæna*. This is found in Assam, Ceylon, and is the Arindi or castor-oil silk-worm of Bengal, so called because it feeds solely on the common castor-oil plant, with which, also, they are fed when domesticated. This is reared over a great part of India, but particularly at Dinajpur and Rangpur. The cocoons are remarkably soft and white, but the filament is very delicate; the silk cannot be wound off, and it is therefore spun like cotton. The yarn thus manufactured is woven into a coarse kind of white cloth, of a seemingly loose texture, but of incredible durability; a person rarely can wear out a garment made of it in his lifetime.

33. *Attacus Guerinii*, *Moore*, is smaller than *A. Cynthia* and *A. Ricini*. It is found in Bengal. Others are *A. Canningii*, lunula, obscurus, and silhetica. *Caligula Cachara*, *Moore*; *C. Simla*, *Westw.*; *C. Thibetæ*, *Westw.* *Neoris Huttoni*; *N. shadulla*; and *N. Stolickzkana* of Mussoorie, Yarkund, and Ladak. *Ocinara lactea*; *O. Moorei* and *O. diaphana* of the Himalayas. *Rhodina newara*, *Moore*, Nepal. *Rinaca zuleika*, *Hope*, Sikkim. *Theophila bengalensis*; *Huttoni*; *mandarina*; *religiosa* and *Sherwilli* of N. India and China. *Trilocha varians*, *Walker*, India.

The species of *Bombyx* called Bhooa, Buro bhoo, Hind., and Kala Jhanga, attack the maturing poppy plant in February and March in Lower Bengal.—*Major Hutton* in No. 8 of *Universal Review*; *Horsfield* and *Moore's Lepidopterous Insects*, 1858-9; *Silk-producing Moths*; *Pro. Zool. Soc.* 1859. See *Lepidoptera*.

BOMERANG, a projectile used by the Marawar of the Tondamaus country, also in Gujerat, and in Australia; it is made of wood, ivory, iron, and wood and iron. The Indian bomerang, the *katureca*, is used by the Koli of Gujerat in the same manner as that of Australia. The distribution of the bomerang corresponds nearly to that of the Australian race as defined by Professor Huxley.

BOMKAR. MAHR. Weavers in Kandesh.

BOMLE-MARA, a tree of Canara and Sunda. Wood very serviceable for planks.—*Gibson*.

BOMMA JEMUDU. TEL. *Euphorbia anti-quorum*.

Bomma Kachchika, *Costus speciosus*, *Sm.*

Bomma Medi, *Ficus oppositifolia*.

Bomma Papata, *Stylocoryne Webera*, *Rich.*

Bomma Sari, *Polycarpæa corymbosa*.

Bommidapu, *Indigofera glandulosa*, *Willd.*

BOMMIGAL. TAM. Toys.

BOMNI AMLI. DUKH. *Adansonia digitata*.

BOMORI, a town in Orchastati, Bundelkhand, in the N.W. Provinces, in lat. 25° 26' 20" N., and long. 79° 54' 40" E., has an artificial lake four miles long and two miles broad.—*Imp. Gaz.*

BOMRAJ, an estate in the Nellore district, Madras. In the 18th century, Bomraj, Venkatagiri, Kalastri (Kalahasti), and Sayyidpur constituted the district of the Western Palayama.—*Imp. Gaz.*

BOM-ZU or **Bun-zu**, Bom-du of the Rakhoing, dwell north of the Koladyn, inhabiting chiefly the upper basin of the Kurnfuli, or eastern branch of the Chittagong river. To the north of the Bom-zu are closely allied tribes, termed collectively Lungkta, Kungye, or Kuki, who occupy the highlands of Tiperah, and extend S.E. towards the head of the Koladyn. Both the Bun-zu and Kuki appear, like the Kumi, to belong to the Burman family. The Kuki represent its most archaic and barbarous condition. The tribes that have been exposed on the seaboard of Arakan or in the basin of the Irawadi, to the influence of the Chinese, Shan, Mon, Bengali, and more distant commercial nations, have attained a comparatively high civilisation. The Singpho, although much behind the Burmans, are greatly in advance of the Kuki; and the Burmese seem at a very ancient period, when their condition was similar to that of the Kuki, and perhaps in many respects more barbarous, to have spread themselves from the Upper Irawadi to the south and west as far as the highlands of Tiperah on the one side, and Pegu on the other.

BONAI, a small tributary state in Chutia Nagpur; area, 1297 square miles. It was ceded to the E. I. Company in 1826. Its Dravidian and Kolarian races are the Bhuiya, Gond, and Kolita. Tigers, leopards, wolves, elephants, and bison are numerous. Population, 24,832.

BONANG. MALAY. A musical instrument of Java.

BONDARA. MAHR. *Lagerstroemia reginae*.

BONDUC NUT. Seeds of *Guilandina bonduc*, *L.*

BONES.

On,	FR.	Istakhan,	PERS.
Knochen, Grate,	GER.	Ashtii,	SANHK.
Haddi,	GUJ., HIND.	Hueso, dado,	SP.
Ossa,	IT.	Yellumbagall,	TAM.
Tulang,	MALAY.	Yemukálu,	TEL.

The bones of cattle and other animals are extensively used in the arts, in forming handles for knives, walking-sticks, inlaying small boxes; lanterns, paper knives, buttons, and many small articles of dress, are made in China from horn and bones. Subjected to destructive distillation in large retorts, amongst the other products which pass over, is a peculiar oil, which is collected, and afterwards employed to feed lamps burning in small, close chambers, the sides of which thus become covered with lamp-black. The mass remaining in the retorts is called ivory black, bone black, and animal charcoal. This substance has a remarkable attraction for organic colouring matter, and is largely used for removing the colouring matter from syrup, in the refining of sugar, and in the purification of many other organic liquors. By exposing ivory black to an open fire, the carbon is driven off, and the bones are nearly blanched. These are reduced to powder, which is used for making the cupels of the assayer, also as a polish-

ing powder for plato and other articles, and also by the manufacturers of phosphorus for making lucifer matches.—*Morrison*, p. 197; *Toml.*

BONG. BENG. *Solanum melongena*.

BONGKO. JAV. *Hernandia sonora*.

BONG LONG THA. BURM. A timber tree of Amherst, Tavoy, and the Mergui Archipelago. It has a durable yet light wood with a very straight grain. Used for every purpose by the Burmese.

BONGS. TAGALA. *Areca catechu*.

BONGU VEDURU. TEL. *Bambusa arundinacea*. Bongu means hollow.

BONIN, of Kashmir, *Platanus orientalis*.

BONITO, the Scomber pelamys, *Linn.*, one of the mackerel tribe. It inhabits the southern seas, and is often caught by hook and line. Its flesh resembles raw beef, and when cooked is not inviting.—*Bennett*, p. 22.

BONO KONIAREE. TEL? URIA? A scarce tree of Ganjam; extreme height 50 feet, circumference 3 feet. Used for planks, boxes, and walking-sticks.—*Captain Macdonald*.

BONOMI, JOSEPH, born 1796, died at Wimbledon Park 3d Dec. 1878. He was the son of Joseph Bonomi, architect to St. Peter's, Rome, and he came to England in 1796 with his father. In 1824 he went to Egypt with Mr. Robert Hay, a naval officer, and remained for eight years studying and drawing the hieroglyphics with Hay, Burton, Arundale, and others. In 1833 he went with Arundale and Catherwood to Jerusalem; they were the first to visit the Mosque of Omar and make detailed sketches of it. From these sketches Mr. Fergusson founded his opinion that this structure was built by order of Justinian over what was then believed to be the Holy Sepulchre. He also visited Sinai, Damascus, and Balbec. On his return to England he was busily employed in making drawings in connection with the works, on Egypt, of Sir Gardner Wilkinson, Dr. Birch, and others. In 1842 he was in the great expedition sent under Lepsius by the King of Prussia, and was another two years in that country. In 1853 he assisted Owen Jones in the works at the Egyptian Courts of the Crystal Palace, which convey a very perfect notion of Egyptian art. In 1861 he was appointed curator of Sir John Soane's Museum in Lincoln's-Inn-Fields. He produced Nineveh and its Palaces, besides numerous papers for learned societies, and contributions to scientific and other journals of the time. He was versed in the reading of hieroglyphics, but never pretended to be an authority.

BON RHEA. See *Boehmeria*.

BON SONE. BURM.? A tree of Moulmein. Wood used for house-building purposes.

BON SURAT, the commercial name given to the fibres of the *Urtica crenulata*, *Orchor putta*.—*Royle*, p. 366.

BONTA. TEL. Mullet fish.

Bonta Ariti, *Musa paradisica*.

Bonta chemudu, *Euphorbia antiquorum*, *L.*

Bonta Vempali, *Tephrosia purpurea*.

BONZE, a corruption of the Japanese *Busso*, a pious man. The term was given by the Portuguese to the priests of Japan, and has since been applied to the priests of China, Cochin-China, and the neighbouring countries. In China, the bonze are the priests of the sect of Fuh (Buddha), and they are distinguished from the laity by their dress. In Japan they are gentlemen of families. The

term has been applied also to the Talapoin of Siam, and to the Phoungye and Raban of Burma.

BOO-AMBILLA-GASS. SINGH. *Antidesma paniculata*.

BOOBY, *Pelicanus sula*.

BOOK.

Kitab; Kutub, . . .	ARAB.	Pusthakam, Pustak-	
Chopdi,	GUJ.	angal,	TAM.
Poti,	MAHR.	Pusthakalu, . . .	TEL.
Tulisab; Katal, . .	MALAY.		

The material of which European books are now made is paper. But the peoples of South-Eastern Asia still use largely the prepared leaf of the palmyra palm tree, on which they write with an iron style. Also a thick paper board, blackened, is largely used by many as a book, on which they write with a soapstone pencil.

Eastern races give the term book-religions to the creeds of the Buddhists, Brahmans, Zoroastrians, Confucius, Lăo-tze, Jesus Christ, and Mahomed. Mahomedans designate the Jews, the Christians, and their own sect, Ahl-i-Kitab, people of the book. The book-religions form three groups, corresponding to the race of the early worshippers. The first is the Aryan. It includes the religion of the Brahmans, professed by the mass of the people of India; the religion of Zoroaster, a branch of the Vedic, preserved by the Parsees, a remnant of the ancient Persian race now settled at Bombay; and the religion of Buddha, a schism from the later Vedic. In the third century B.C., Buddhism became, under king Asoka, a state religion. Some centuries later it was rejected by the Hindus, and now there is scarcely a Buddhist in India; while it has become a religion in China, Tibet, Siam, Japan, Burma, and Ceylon, and its members cannot comprise less than one-third of the human race. The second group is formed by the three Semitic religions, Mosaism, with its two offshoots, Christianity and Islam. European Christianity is a resultant of Semitic and Indo-European religions. The three Semitic religions claim a spiritual descent from their forefather Abraham. The third group contains the two Chinese religions of Kung-Fu and Lăo-tze. All book-religions, with the exception of Brahmanism, had a founder with a distinct personality. Zoroaster, Buddha, Lăo-tze, Confucius, Jesus, and Mahomed lived noble lives, and left their words a rich legacy to mankind. None of them professed to found a new religion; they all claimed to restore an original faith. Zoroaster spoke of the prophets who were before him: 'Such sayings of ancient times hast thou revealed, O Ahura.' Buddha only claimed to be a link in the chain of wise men; Confucius said that he was 'a transmitter, not a maker, believing in and loving the ancients;' Lăo-tze desired to revive the faith of the earliest and purest age; Moses was 'educated in all the wisdom of the Egyptians;' Jesus assures us that he came 'not to destroy but to fulfil;' Mahomed said, 'Follow the religion of Abraham; he was neither Jew nor Christian, but righteous, pious, and no idolater.'

BOOK ATTENE. SINGH. *Alstonia scholaris*.

BOOKHOOR. HIND. Perfumes burnt in exorcising.

BOOK THA. BURM. A scarce tree on the sea-coast from Amherst to Mergui. When seasoned it floats in water. It is used by the Burmese for helves, but rots quickly.—*Captain Dance*.

BOOLAQ. HIND. A nose ornament of Mahomedan women.

BOOLDANA, a revenue district and town in the Hyderabad Assigned Territories in Berar.

BOOLOO. SINGH. Myrobalan. Booloo-gass. *Terminalia bellerica*, *Roxb.*

BOOLUN. HIND. Gold thread used in making gold lace and brocades.

BOOM, a Tibetan work in twelve volumes, containing tracts of the Eloopka Section; eleven volumes were sent to the Indian Museum.

BOOM. SINGHIO. A river.

BOORAQ, a fabulous animal on which Mahomed is said to have passed from Jerusalem to heaven.

BOORBOOROOK or Boorboorqa. HIND. A small double hand-drum.

BOOR-COLE is grown in India to great perfection; the leaves are curled. The tops should be cut off when two feet high; the sprouts are the only part fit for use.

BO-PHALLI. HIND. *Corchorus olitorius*, *C. depressus*, *C. acutangula*, and other species.

BOPP, F., a Sanskrit scholar, who from the year 1816 printed works on Sanskrit grammar and comparative philology. He was the founder of comparative philology; in 1816 published his work *Das Conjugations-system*, and between 1833 and 1853 his *Comparative Grammar of Sanskrit, Zend, Greek, Latin, Lithuanian, Slavonic, Gothic, and German*. His Sanskrit grammars were published in 1827, 1832, and 1834, and his *Vergleichendes Accentuations-system* in 1854.—*Sagee*.

BOPPAYI. TEL. *Carica papaya*.

BORA. HIND. *Delichos cutjang*.

BOR-ABOR, a race dwelling on the north of the Abor, occupying the mountains on the north of the Brahmaputra river, in lat. 28° N. and long. 95° E., to the west of the Dihong river. Bor and Abor are Assamese names for the people who call themselves Padam. Bor means tribute; hence Abor, free from tribute; and the Padam race are so arranged into the payers and non-payers of tribute. Bor is also said to mean great, and we find the term of Bor Khaunti employed. They carry bows and arrows, some of which are poisoned. Their dress is made of the bark of the Uthul tree. The Bor-Abor is the more distant, the more independent, and stronger portion. The Bor-Abor lie on the higher hills. Considerable numbers of these people are also found on the shores of the two great northern branches of the Brahmaputra river. The British Government make money payments to the Bor-Abor, Dola, Miri, and Aka, to abstain from levying black-mail in Assam. In the end of 1861, the Meyong Abor attacked and plundered a village in British territory, but the tribe expressed a desire to renew friendly relations, and begged that their offences might be overlooked. On the 5th November 1862, an agreement was made with them, binding them to respect British territory; and the same engagement was subscribed on 16th January 1863 by the Kelong Abor. On 8th November 1862, a similar engagement was concluded with the Abor of the Dihong Dibang Doars.

The Abor Miri language belongs to the old Assam alliance, but it has been greatly modified by Tibetan. It has a strong ideologic resemblance to the Dhimal, Bodo, Garo, and Naga.—*Jour. Ind. Arch.* 1853; *Treaties*, vii. p. 343; *Indian Annals*; *Latham's Ethnology*.

BORA-CHUNG, or ground-fish of Bhutan. It inhabits the jhils and slow-running streams near the hills, but lives principally in the banks, into which they penetrate from one to five or six feet, and are found generally two in each chamber, coiled concentrically like snakes. The entrance to these retreats leading from the river into the bank is generally a few inches below the surface, so that the fish can return to the water at pleasure. It is believed that they take possession of holes made by land-crabs. The bora-chung appear to be an *Ophiocephalus*, probably the *O. barka* described by Buchanan as inhabiting holes in the banks of rivers tributary to the Ganges.—*Tenent's Ceylon*, p. 367.

BORAGINACEÆ. *Lindley*. The borage tribe, comprising the genera *anchusa*, *borago*, *coldenia*, *cynoglossum*, *echinospermum*, *echium*, *chretia*, *heliotropium*, *lithospermum*, *messerschmidia*, *myosotis*, *onosma*, *tiaridium*, *tournfortia*, and *trichodesma*. *Borago officinalis*, *Linn.*, Ch'ota Kulpa, HIND., a plant of Europe; is grown in India as a pot herb, and the young shoots and leaves for salad; requires treatment similar to Angelica. It is suitable for the flower garden. Country borage is the *Coleus Amboinicus*.

BORASSUS FLABELLIFORMIS. *Linn.*

Lontarus domestica, *Rumph.*

Dom. Tafi, . . .	ARAB.	Pana, Am-Pana, . . .	MALEAL.
Tal-gach'h, . . .	BENG.	Tala, . . .	SANHK.
Palmyra Brab tree, . . .	ENG.	Panam muram, . . .	TAM.
Tar ka jhar, . . .	HIND.	Tatti, Penti-tati, . . .	TEL.
Kontal, . . .	JAV.	Karata-lamu, . . .	..
Lontar, . . .	MALAY.	Potu-tali, . . .	..

To eastern nations, the palmyra tree is only inferior in usefulness to the bamboo, the date tree, and the cocoanut palm. It grows straight to a height of 70 feet, with a girth of 5½ feet at bottom and 2½ at top. A Tamil poem of Ceylon, the Tala Vilasam, enumerates 801 purposes to which the palmyra may be applied. The trees have to attain a considerable age before they become fit for timber, as their wood becomes harder and blacker by age, and the harder and blacker it is the better. The wood near the circumference of old trees is very hard, black, heavy, and durable. A cubic foot weighs 65 lbs., and it is calculated to last 80 years. In some parts of the Ceylon and Madras coasts, this tree is very abundant, especially in sandy tracts near the sea, though it is to be seen in most parts of India, and occasionally so far north as 30°. It is used chiefly for rafters, joists, and reapers. When of good age, the timber is very valuable for this purpose. The trunk is split into 4 for rafters, into 8 for reapers; these are dressed with an adze. Those of the Jaffna palmyras are famous, and were, in former times, largely exported. From the structure of the wood, it splits easily in the direction of its length, yet supports a greater cross strain than any other wood. Old black palmyra wood was, next to the casuarina, the strongest wood that Dr. Wight tried. One specimen bore upwards of 700 lbs., and five of them gave an average of 648 lbs., though he found some very bad. Mr. Rohde also remarks that it is the strongest wood he tried, retaining for a length of time the position it assumed when loaded, without increase of deflexion. Iron nails soon rust in this wood. The thickness of rafters when trimmed up rarely exceeds two inches four feet from the ground, and one inch at twenty or twenty-four feet from it.

The fruit and the fusiform roots of the young trees are used as articles of food by the poorer classes, the fruit when young being jelly-like and palatable. Next to *Caryota urens*, it is the largest palm on the coast of the Peninsula. The dried leaves are used for writing upon with an iron style; also in thatching, making fans and light baskets for irrigation. The fibres of the petioles of the leaves (*Palmyra nar*) are employed for making twine and small rope; they are about two feet in length. The large carpenter beetle, *Xylocopa*, delights in boring this hard wood, though cumbóo wood is still more attractive to it. Small canoes are formed of this tree. Two of the stems lashed to a couple of spars form the usual mode of crossing lakes and rivers in the Circars; the root forms the head of the canoe, the smaller end is either elevated out of water by the form, or some six inches of the pith is left at that end; as this decays, a lump of clay supplies its place. Formerly sea-going vessels were planked with this wood, but the iron fastenings were soon destroyed. Boats planked with it were, till the middle of the 19th century, common on the Godavery, being built probably where sawyers are not procurable. The peculiar structure of the wood of all the palms deserves attention; it appears formed of a series of hard, stiff longitudinal fibres, not interlaced or twisted, but crossed at considerable intervals at various angles by similar fibres, which proceed from the soft heart of the tree to the outer part, probably to the leaf-stem. A radial section of *palmyra* rafter shows this. The interstices are filled up with pith, the proportion of which increases with the distance from the outer part. The wood, known as porcupine wood, is used in England for veneers and inlaying. In Ceylon it is used for rafters, pillars, and posts of native houses. In the sandy parts of Jaffna, in Ceylon, a hollow *palmyra* is inserted to form a well. The dark outside wood of very old trees is used to some extent in Europe for umbrella handles, walking-canes, paper-rulers, fancy boxes, wafer stamps, and other articles. The timber of the female tree is the hardest and best; and that of the male tree is never used unless the tree be very old. At certain seasons of the year, thousands are employed in felling and dressing it. Each tree has from 25 to 40 fresh green leaves upon it at a time, of which the natives cut off twelve or fifteen annually, to be employed as thatch, fences, manure, mat, and mat baskets; bags, irrigation baskets, winnows, hats, caps, fans, umbrellas, etc.; books and olay, tatakoo or puttay, for writing on. In the Northern Konkan it is in some parts so abundant that it might be termed a forest. It is a rare tree in the southern jungles of the Bombay Presidency. The wood, when protected from moisture, is very durable, and may be used with advantage for terraces, etc., when the upper covering is complete. Its fruit, of the size of an ostrich egg, grows in clusters; but trees from which toddy or palm wine is drawn, cannot bear fruit. When the spathes of the fruit-bearing trees appear, the toddy drawer, climbing to the top of the tree, binds the spathes tightly with thongs to prevent their further expansion, and thoroughly bruises the embryo flowers within. For several succeeding mornings this operation of crushing is repeated, and each day a thin slice is taken off the end of the racemes, to facilitate the exit of the sap

and prevent it bursting the spathe. About the morning of the eighth day, the sap begins to exude, when the toddy drawer again trims this truncated spathe, and inserts its extremity into an earthen pot to collect the juice. These vessels are emptied morning and evening, and the *palmyra* will continue for four or five months to pour forth its sap at the rate of three or four quarts a day; but once in every three years the operation is omitted, and the fruit is permitted to form, without which the natives assert that the tree would pine and die. The tree, during the first part of the season, yields a pretty large quantity of palm wine. This is either drunk fresh drawn from the tree, or boiled down into a coarse kind of syrup called jagari, or it is fermented for distillation. The date tree in South India also furnishes toddy, and the amount of daily drunkenness exceeds all that is ever witnessed in Europe. A farina, called *Ila-Pananki jangu mavu*, is obtained from the root by treating it as in manufacturing manioc. It is very nourishing. The germinating seeds (*Ponattoo*, SING.) are boiled and eaten in Ceylon as a vegetable.—*Sceman*; *Simmonds*; *Drs. Wight, Cleghorn, Gibson*; *Mr. Rohde*; *Hartwig*, p. 139; *Sir J. E. Tennent*, ii. p. 523.

BORAX, Bi-borate of soda, Tincal.

Burug, Tunkar, . . .	ARAB.	Pijer, . . .	JAV., MALAY.
Kuddia-khar, . . .	BENG.	Soda biborax, . . .	LAT.
Pung-sha, Pang-sha, CHIN.		Patteri, . . .	MALAY.
Yueh-shih, Pwan-sha, "		Chaularaya, . . .	NEP.
H'wang p'ung sha, "		Tunkar, . . .	PERS.
Borax, . . .	DUT.	Tunkana, . . .	SANSK.
Borate de soude, . . .	FR.	Lansipuscara, . . .	SINGH.
Tunkun-khar, . . .	GER.	Vengaram, . . .	TAM.
Borace, . . .	IT.	Velligaram, . . .	TEL.
Sohaga, . . .	HINDI.	Tsale, . . .	TIB.

The greater part of the crude borax or tincal met with in commerce, was formerly obtained from lakes in Tibet, the waters of which yield a yellowish-white mass, containing from 30 to 50 per cent. of real borax. That was refined chiefly at Venice and Amsterdam. Recently, a lake with waters similarly impregnated has been discovered at California. But, for a long time past, in Europe, the borax of commerce has been obtained by treating with carbonate of sodium, the boric acid obtained from the volcanic district of Tuscany, where jets of vapour issue from the ground. Natural borax is obtainable in large quantities in the valley of Puga, in Ladakh, from Lake Jigatzi in Tibet, 20 miles in circumference; also in the course of the Sanpu river, and from the Chaba lake beyond the Kylas hills. It is collected on the borders of the Tibetan lakes as the water dries up, then smeared with fat to prevent loss by evaporation, and transported across the Himalaya on the backs of sheep and goats, then refined at Unritsur and Lahore by washing with lime water. The salt and borax fields of Gnari, called *Lha-lhaka* or *Lhali-lhaka*, are to the north of Bongbwa Tal. Borax is procurable at Rudok in Changtan at ten annas per maund, of such quality that only about a quarter is lost in refining. That obtained at Puga, in the territory of the maharaja of Kashmir, loses one half. The Rudok borax is conveyed on sheep to Rampur on the Sutlej, at the rate of two miles a day, so that the price on the plains of raw borax rises to 7 rupees the maund, and of refined borax to 25 rupees.—*M. and M. Pr.* 1872-3. It is largely imported into Digarchi, whence it is distributed to other parts of Tibet and to India,

via Nepal, Sikkim, and Bhutan. It is used in the arts to clean metals before soldering, to form a glaze on earthenware, and in the preparation of varnishes. It is employed as a chemical flux, and in experiments with the blow-pipe, and in the moist way as a solvent for gum-lac. It is much used by the goldsmith, tinkers (Cannar, TAM.), and tinmen (Tagara-velecarer, TAM.), to facilitate the fusion of their metals. With it and lime-juice, the vaishnava Hindus prepare the irred Tiruchurnum, with which they mark their foreheads perpendicularly. Borax is readily purified by simple solution and crystallization. It is sometimes adulterated with alum and common salt; but ammonia gives a white precipitate (alumina) if the former, and nitrate of silver a white precipitate if the latter, be present. Price of raw borax, 4d. per lb.; of refined borax, 6d. per lb.—*Beng. Phar.*; *Ains. Mat. Med.*; *Cal. Cat. Ex.* 1862; *Powell, Handbook*.

BORE or Tidal wave.

The dee lon, . . .	BURM.	Bana, . . .	MALAY.
Eagre, . . .	CHIN.	Bar, . . .	PERK.
Ban, Bora, . . .	HIND.		

The bore occurs in Southern and Eastern Asia on several rivers, in the Gulf of Cambay, the Ganges, the Irawadi, and the Sitang, and on some rivers in China. Arrian (*Exped. Alex.* vi. 19) mentions how this phenomenon astonished the soldiers of Alexander, who had been accustomed to the tideless waters of the Mediterranean. The bore is a tidal wave which comes rolling in from the sea. In the Hoogly this is called Bora or Bore; in China it is known as Eagre; in the mouth of the united Tigris and Euphrates it is called Bar; in the Dordogne in France, it is called Mascaret; in the Marañon it bears the name of the Rollers; but by the American Indians it is called Pororca. This phenomenon is connected with the tides, as it always occurs at the springs.

The crest of the tidal wave in the Bay of Bengal, to the south of the bay, is almost a straight line running N.W. and S.E. between the south coast of Ceylon and the southern coast of Java. As it proceeds up the bay, it becomes convex towards the shore, and near the estuary of the Megna encounters at an obtuse angle vast quantities of fresh water coming down the three channels. When the tide is more than usually strong, as at full moon or under the influence of a strong S.W. wind, or when the river is heavily flooded, the opposing masses of water accumulate more rapidly, and the bore is produced. But when this occurs there are always two bores, one of salt water up the Sundip channel, known as the Chittagong bore; the other, called the Daula bore, up the middle and western channels. These two bores meet to the north of Siddhi. When the bore is violent, as during the equinoxes, and also when the S.W. wind is strong, it advances as a wall of water several feet high, stretching across the channels, and is so dangerous that native boatmen will for no consideration venture out into the river. Dr. Hooker mentions that, at the mouth of the Megna river, the great object in the navigation is to keep afloat and to make progress towards the top of the tide and during its flood, and to ground during the ebb in creeks where the bore (tidal wave) is not violent.

Similarly, the bore in the Hoogly is occasioned

by the flood-tide, driven into the narrow river through the broad estuary, overcoming the freshes sent down by the heavy rains of the S.W. monsoon. It occurs between May and October, but is heaviest between July and September, between two days before and two days after the full moon. It also occurs at the change, but not with such violence. The wave usually rises on the Diamond Sand, where the river suddenly contracts and comes in 12 or 15 feet perpendicular with tremendous noise, carrying everything before it, though not with equal force, on both sides of the river, as it goes from point to point in the reaches, travelling at the rate of nearly 20 miles an hour to above Calcutta. There are generally three rollers following one another in quick succession, at 13 to 15 feet apart. When the S.W. monsoon has set in, the bore, for three or four days at the full and change of the moon, may be seen racing up the Hoogly river at the rate of twenty miles an hour, dashing from side to side of the river according as the bends or reaches deflect it in its course. Upon the approach of this wave a distant murmur is heard, which soon turns into the cry, Ban! ban! ban! from the mouths of thousands of people, boatmen, sailors, and others, who are on the look-out for this much-dreaded wave. This cry is the signal for all sorts of small craft to push out into the centre of the river, the only spot where the wave does not curl over and break. Should any boat or small craft be caught in that portion of the wave that breaks, instant destruction is inevitable. Numerous boats from the up-country provinces are lost every year, from the crew being ignorant either of the existence of the bore, or from not knowing the correct position to take up so as to meet it. Ships at anchor in Calcutta, though not exposed to the breaking portion of the wave, frequently part their cables when struck with the wave. Standing on the shore during the rapid rushing passage of the bore, it is a curious sight to see the lower portion of the river, or that nearest to the sea, six or eight feet higher than the upper portion of the river, the tide rising that number of feet in an instant. The height of the bore in the Hoogly varies from five to twelve feet; it is exceedingly dangerous in some parts of the river, but more moderate in others; it never breaks on both sides of the river at the same time. Deep water engulfs its force, but shallow water, or a sandbank, brings out all its power and fury. The bore, in 1782, flowed as far as Nuddea in the Hoogly, but at the present day it falls short of that place by many miles, not ascending much beyond Sooksagor. It reaches Dacca on the Buree Gunga, and Casteo on the Horinghatta branch.

In the Sitang river, of Burma, its fury is great, and occasions much loss of life. Burmans name 30 feet as the height to which it occasionally rises, and this may perhaps be the case in the bends of the river, where the rush has attained its full speed, before being reflected to the next bend. Even in the Hoogly at Calcutta, near the bend at Chandpal Ghat, the pointed curling wave may be seen several feet high.

The bore of the Taisien-tang river, in China, according to a Chinese proverb, is one of the three wonders of the world, the other two being the demons at Tang-chan and the thunder at Lung-chan. As in other countries, it appears generally on the 2d or 3d day after the full and

change of the moon, or at what are called spring tides, and particularly in spring and autumn, about the time the sun is crossing the line. Should it so happen that strong easterly gales blow at these times, the eagle rolls along in all its grandeur, and carries everything before it. Dr. Macgowan gave an account of it at Hang-chow-fu. Mr. Fortune, from a terrace in front of the Tri-wave temple, saw on a sudden all traffic in the thronged mart suspended; porters cleared the front street of every description of merchandise; boatmen ceased lading and unlading their vessels, and put out into the middle of the stream; so that a few minutes sufficed to give a deserted appearance to the busiest part of one of the busiest cities in Asia. The centre of the river teemed with craft, from small boats to large barges, including the gay flower boats; loud shouting from the fleet announced the appearance of the flood, which seemed like a glistening white cable stretched athwart the river at its mouth, as far down as the eye could reach. Its noise, compared by Chinese poets to that of thunder, speedily drowned that of the boatmen, and as it advanced, at the rate of 25 miles an hour, it assumed the appearance of an alabaster wall, or rather of a cataract, four or five miles across, and about thirty feet high, moving bodily onward. Soon it reached the advanced guard of the immense assemblage of vessels awaiting its approach, all intently occupied in keeping their prows towards the wave, which threatened to submerge everything afloat; but their boats all vaulted, as it were, to the summit with perfect safety, and when the eagle had passed about half-way among the craft, on one side they were quietly reposing on the surface of the unruffled stream, while those on the nether portion were pitching and heaving in tumultuous confusion on the flood, and others were scaling with the agility of salmon the formidable cascade. This grand and exciting scene was but of a moment's duration. The wave passed up the river in an instant, but from this point with gradually diminishing force, size, and velocity, until it ceased to be perceptible, which Chinese accounts represent to be eighty miles distant from the city. A slight flood continued after the passage of the wave, but it soon began to ebb. The Chinese say that the rise and fall of the tide is sometimes forty feet at Hang-chow. The maximum rise and fall at spring tides is probably at the mouth of the river, or upper part of the bay, where the eagle is hardly discoverable. In the Bay of Fundy, where the tides rush in with amazing velocity, there is at one place a rise of seventy feet, but there the magnificent phenomenon in question does not appear to be known at all. It is not, therefore, where tides attain their greatest rapidity, or maximum rise and fall, that the wave is met with, but where a river and its estuary both present a peculiar configuration.—*Fortune, A Res. among the Chi.* p. 316; *Calcutta Review*; *Arrian*; *Geog. Mag.* 1877; *Findlay*.

BORECOLE, *Brassica oleracea*, var. *Scotch Kale*; winter greens of England and Scotland.

BOREE and **Boregaum** are names for numerous towns of British India, many seemingly obtaining their designation from the Hindi word *Burha*, meaning old. **Boregaum** would be old town.

BOREE, *SIND*. *Typha elephanta*.

BOREGHAT, a pass in the Western Ghats leading from Bombay to Poona, in lat. 18° 46' 45"

N., and long. 13° 23' 30" E. Its summit is 1798 feet above the sea.

BORENDIA or **Buang**, a pass in the Himalaya, in 31° 22' N. and 78° 6' E., in Garhwal-Kanawar. The top of the pass is 15,296 feet according to Herb. and Hodgson, but 15,095 feet according to Gerrard. The source of the Pabar is 12,914 feet, Herb. and Hodgs., but 13,839 feet, Ger. It leads from the Baspa valley to the upper part of the Pabar or Tons river.—*Thomson, Tr.* 75; *Schl.*

BORER. *ENG.* A name given to the larva of coleopterous beetles which injure coffee trees, though the *Casuarina* and the *Cinchona* are also attacked by insects which have not been determined. There are two, the white and red borer, and the former and chief of these is the *Xylotrechus quadripes* of Chevrolat. The white borer has been likewise named the *Sirex gigas*, and popularly the worm or coffee fly. Whole estates in Coorg have been entirely destroyed by this scourge. In its complete stage the insect appears as a fly or winged beetle from 6 to 9 lines in length, with a hard slimy coat, in colour red and black, or yellow and black, in alternate transverse lines. It bores a passage into the stem of the coffee tree, generally a few inches above the ground. This passage, at first horizontal, soon takes an upward or spiral direction, and after a little a retreat is formed in which to deposit its larva. The tree soon begins to droop, and in a short time dies down to the point where the entry was effected, at which part it can be easily broken off by a sharp pull at the upper part. The large and rapid introduction of coffee-growing into Ceylon and India has shown that the plant is liable to be attacked by many enemies, and ignorance of that has been the cause of much loss. Coffee trees in Coorg have also been injured by the rot, a disease resulting from improper pruning. The rot attacks and decays the centre of the stem. In Coorg, when the tree is attacked by the borer, the leaves become yellow and droop. The insects are generally about the diameter of a small quill, are always confined to the wood, and never enter the bark until the larva has done its work, passed through the pupa stage, and is about to escape in the form of a beetle. The eggs are deposited by the females near the root of the tree, and the pupa borers tunnel up the heart of the plant.—*Dr. Bidie on Coffee Planting.* See Bug.

BORI. *MAL.* Croton seed.

BORI, a sweetmeat of Dera Ghazi Khan, in yellow lumps, consisting of the pollen of the dib grass (*Typha elephanta* and *T. angustifolia*) collected and kneaded together, perhaps with the aid of a little treacle or sugar.

BORI, a small forest tract 30 square miles in extent, situated S. of the Pachmari range of hills in the Chhindwara district, and containing some fine teak and other timber.

BORNA COTI, in Hinduism, an imaginary city, supposed to lie under the equator at 90° from Lanka.

BORNELLA DIGITATA. *Adams*. A nudibranch or marine slug, which occurs in the tropical seas in the south of Asia, at Aden, in the Straits of Sunda, and on the Madras coast. It has brilliant colours, with vermilion streaks, is delicately marbled, and has waving elegant tufts. It swims by a lateral movement of the body.—*Collingwood, Rambles of a Naturalist*, London, 1868.

BORNEO, after New Holland, is the greatest island on the globe. If we comprise the numerous archipelagoes by which the island is environed, this group may be said to occupy more than eleven degrees of longitude and about ten of latitude, between lat. 7° N. and $4^{\circ} 20'$ S., and between long. $106^{\circ} 40'$ and $116^{\circ} 45'$ E. Its length from north to south will be about 300 leagues, and its breadth varying from 250 to 150 leagues. Its superficies, calculated by Melvill von Carnbee, and published in *Le Moniteur des Indes*, gives Borneo a surface of 12,741 square leagues, or 6992 myriametres, which makes it 2589 myriametres greater than Sumatra, and 5723 myriametres greater than Java. A native of Portugal, Lorenzo de Gomez, was the first of the European navigators who approached the northern part of this island, in 1518, in the ship *St. Sebastien*, on his route to China. He says that the natives termed it Braunai or Brauni, but the aborigines do not use any name appropriated to the whole extent of the country. The seaboard is even most often unknown to the savage and wandering tribes, who are separated by great distances from each other. The different tribes designate themselves by the names which they give to the rivers on the borders of which they have established their abode; it is thus that all the Dyaks of the great river Dusan (the Banger of the maps) call themselves Orang Dusan, and those of the river Sampit, Orang Sampit; Raja Brooke makes mention of Dyak tribes under the names of Sarebu, Sakarran, Lundu, Sibnuw, etc., established on the rivers which bear those names. Lofty ranges of mountains are in the centre and the north-west. Mr. St. John, in 1858, found each range looking more lofty as he approached the interior, but presenting one uniform aspect of forest, covering hill and valley. The great mountain Kinibaloa, in the N.E., is 13,000 feet high. The land on all sides gradually slopes towards the coast. The Sultan of Braunai claims an immense territory. The Dutch claim a territory exceeding 200,000 square miles on its western and south-eastern sides, with a population in 1881 of 1,014,547. The Spaniards till lately claimed territorial rights; and in 1881 Great Britain allowed a British company to obtain from the Sultan 30,000 square miles and 500 miles of seaboard, with the royal rights of life and death. Labuan has belonged to Great Britain since the middle of the 19th century, and Sarawak to the Brooke family.

Its inhabitants are generally recognised as of the Malay, the Kyan, and Dyak stocks. The Malay are settlers along the coast from Sumatra, Java, and Malacca; the Dyak is the name for the prior races, divided into land and sea Dyak, the latter being richer and more powerful, those of the interior being broken up into innumerable clans, some of them being tributary to the Sultan of Braunai, some of them under the Dutch in the south and west of the island, and some under the Sarawak Government. The *Millanowe* are on the north-east of the Sarawak territory. They are of a fair complexion, and are occupied with agriculture, trade, and peaceful pursuits. The *Kyan* are a powerful tribe of about 100,000 souls, who occupy the country from the south of the kingdom of Braunai right away into the interior; they strongly resemble the Dyak.

The *Dyak* are generally well made, with a

muscular, well-knit frame, and are rather under than over the middle height. Their features are regular. Their colour is a deep brown, occasionally varying to a lighter shade. They dwell in very long houses, occasionally large enough to contain a community. From their supposition that the owner of every human head which they can procure will serve them in the next world, the system of human sacrifice surpassed that which was practised by the Batta of Sumatra, or, it is believed, by any people yet known. A man could not marry until he had procured a human head; and the possessor of several was distinguishable by his proud and lofty bearing. The chiefs sometimes made excursions of considerable duration for the sole purpose of acquiring heads, proceeding in their canoes to the more distant parts of the country, to which the numerous ramifications of the rivers afford them easy access. Upon their arrival near a village, if the party were small, they would take up their position in the bushes close to some pathway, and attack a passer-by unawares. A larger party would attempt perhaps to surprise a whole village; would remain concealed in the jungle on the banks of the river during the day, and at night surround the village so completely as to prevent the escape of the intended victims; an hour or two before daybreak, the attack commenced by setting fire to the houses, and their victims were destroyed as they endeavoured to escape. Apparently head-hunting was only general among those tribes inhabiting the banks of the large rivers, on which distant voyages can be made with facility, the Dyak race in the northern parts of the island being content with an occasional human sacrifice on the death of a chief. The sacrifice of a cock is sacred, as with the Karen and Chinese, and they believe that the Divine Being eats the spirit or essence of the offerings made to him. Head-hunting is now scarcely heard of. They are brave, hospitable, simple, and truthful, loyal, grateful, and willing to receive instruction. Chastity before marriage is not insisted on, and they marry when grown up. The men wear a narrow cloth passed between the thighs. The women have a still narrower strip, allowed to fall from the hips half way down the thighs, and affords little concealment. The clans have different languages, and they had no written character. With some Dyak tribes the couvade custom prevails. Among the *Millanowe* Dyaks the custom prevails of burying a slave at the foot of the excavation for a house post. The *Millanowe*, southward and westward, living on rivers near the sea, an industrious, intelligent people, who occasionally took heads, but have not the ferocity of the *Kyan*.

Orang Poonan, a forest race near the territory of the Mahomedan sultan of Koetei. Their tribes, like the Veddahs of Ceylon, pass day and night entirely in the open air, with no other shelter than a mat. They keep up fires all night. They wear a head-dress and a waistcloth of bark, and eat monkeys and game, which they kill with the sumpitan or blow-tube and poisoned arrows. The women are fairer than the Dyaks, but very dirty in their persons. They welcomed Mr. Bock by asking for beads and tobacco.

Mr. Carl Bock, writing in 1881, mentions his visit to a chief of the cannibal Dyaks, who had just slaughtered, and, with his followers, eaten up

seventy victims. He allowed himself to be sketched, and presented the author with two crania and a shield, in return for rice, beads, and twenty-four yards of calico. A high priestess of these savages stated that the palms of the hand were considered the best eating. A war-dance was executed by a Dyak, with much shouting, stamping, and flourishing of a sword. A Dyak is never without his sword, and his basket for betel and tobacco. Generally he wears a cloth or piece of bark round his loins, and a covering for the head of the same material. The lobes of their ears are hideously enlarged by artificial means; and when a warrior has secured a good many skulls, he is allowed to deck his ears with the canine teeth of a leopard. The Dyak, in their physical and social characteristics, resemble the Tarajah of Celebes.

The *Idam*, occupying the northern parts of Borneo, suspended human skulls in their houses. The dominant Malay and the colonists of China are an active and industrious but turbulent and intractable part of the population (*Revue de deux Mondes*, ii.).

The *Orang Dusun* villagers of the north are agricultural; the *Murut* in the inland parts of Braunai; the *Kadians* of the same country, are industrious, peaceful nations, valuable for those qualities.

The *Kyan* are more numerous, more powerful, and more warlike than any other in Borneo. They are an inland race, inhabiting a district extending from about sixty miles up the interior from Tanjong Barram to within a similar distance on the eastern shore. Fierce, reckless of life, and hot-blooded in their nature, they are nevertheless represented to be hospitable, kind, and faithful to their word, and honest in their dealings. The *Kyan*, on the *Kapuas*, are said to have been cannibals, eating the flesh of their enemies. They prize heads like the Dyaks. They carry spits in the scabbards of their swords. The Dyaks of Jangkang also are said to be cannibals. They live between Sangow and Sadong on the Sakiam, a branch of the Sadong river. The Jangkang people eat Malays or Dyaks or any one else whom they kill in war, and they kill their own sick if near death, and eat them. Whilst a party of this people were staying at Sangkang, one of them fell out of a mango tree and broke his arm, besides being otherwise much hurt, and his companions cut his throat and ate him up. The Jangkang Dyaks are said to eat only the tongue, brain, and muscles of the leg. The men of this tribe file down their front teeth to a point, like the teeth of a saw. They cut off their beards.

The *Tatau*, *Balinian*, and *Kanawit* have dialects of their own, and are wild and savage in their manners. Nine vocabularies have been collected, the most extensive by Mr. Robert Burns, and it is that of the most numerous, advanced, and powerful tribe in the island, the *Kayan* or *Kyan*, whose possessions extend from the northern to the southern coast. No native tribe of Borneo has ever invented letters. Mr. Crawford had seen the names of at least sixty of these small nations who have no common name by which to distinguish themselves from the people of other regions. The many languages of this island belong to the same class of languages as the Malay and Javanese; and the aboriginal inhabitants of Borneo are all of the same race with the Malays and Javanese.

In 1824, out of the forty wild tribes in its interior, eight had adopted Mahomedanism and the Malay language. Amongst these were the Dyak race of Sugalam, who long since abandoned the cruel practice of head-hunting. There are eleven tribes located between the Malay of the coast and the *Kyan*, namely the *Kanawit*, *Bakatan*, *Lugat*, *Tan-yong*, *Tatau*, *Balinian*, *Punan*, *Sokapan*, *Kajaman*, *Bintulu*, and *Tilian*, the majority of whom are tributary to the *Kyan*. The six first mentioned are all more or less tattooed, both male and female, and certainly have all sprung from the one called *Kanawit*, who in habits closely assimilate to the Dyak of all Saribus, whose neighbours they are. The tribes *Punan*, *Sokapan*, and *Kajaman* are the chief collectors of camphor and birds' nests. The trees, which produce excellent timber, amount to upwards of sixty species.

At the mouths of most of the rivers on the east coast of Borneo, and also on the north and north-east coasts, the *Orang Bujar* are found. They dwell in boats of eight or ten tons burden, which are covered, when in harbour, with a roof of matting. Each boat contains about fifteen inhabitants, men, women, and children, who employ themselves chiefly in catching and curing fish and trepang, and in making salt from seaweed. The latter they dispose of to the Dyaks. The women are equally skilful with the men, both in fishing and in the management of the boats. During the south-east monsoon, when the weather is fine in the southern parts of the island, they cruise about Passir and Pulo Laut; but when the monsoon changes, they sail on the northern parts of the island. In addition to these, living in prahus, and wandering about the shores of the island, are the *Lanun* from Magindano, and the *Orang Tidong*, country unknown. Brazen images, ruins of temples, and other remains of Hindu civilisation, are still to be seen on the southern coast. The coasts of the island are inhabited by several nations, totally unconnected with each other, governed by their own laws, and adopting their own peculiar manners and customs. The west coast is occupied by Malays and Chinese, the north-west coast by the half-caste descendants of the Moors of Western India, the north part by the Cochinchinese, the north-east coast by the Sulu, and the east and south coasts by the Bugis tribes of Celebes. The greater part of the coast of Borneo is rather dotted than peopled by Malay settlements, according to the Malays themselves, the result of migrations from Sumatra dating as far back as thirty generations. A small portion of the eastern coast is occupied by settlements of the Bugis of the Celebes of more recent date. The aboriginal inhabitants are thus in a great measure locked up in the interior, and precluded from access to that commerce with strangers which might civilise them. The Malays and natives of Celebes, by their superior civilisation and power, domineer over the rude aborigines, without, however, being able to penetrate into the interior, or to dispossess them of their land. The Malays build their houses 18 or 20 feet high, to avoid the Dyak spears. All the houses in a kampong are erected on posts 10 or 12 feet high, and are all under one roof, with only a slight partition separating the families.

Borneo, as a mineral country, is very rich, producing gold, coal, antimony, and iron, while caoutchouc and gutta-percha are amongst its

vegetable products. From the river Barum coal is traced to the upper parts of the Bintulu, and thence southward to the Rajang river, on the left bank of which, at Tujol Nang, there is a seam exposed, upwards of thirteen feet in thickness. At different other parts of the river, and also in several of its branches, coal is in abundance. From Tujol Nang the strike of the coal is southward across Dragon's plain. It is again found in the river Lang-Tha (a distance from the former place of about fifty miles), where it remained in a state of ignition for several years. Iron ore, yielding from 60 to 80 per cent. of iron, abounds in the Baluwi or Rajang district, over nearly one-half of the extreme breadth of the island. The iron is preferred to that of Europe.

The varieties of animal life are great. Some species of Actinia of enormous size occur in the China seas and on the coasts of Borneo, and fish live within them. Of 29 species of birds in Borneo and 21 in Sumatra, 20 are common to both islands. Of 29 in Borneo and 27 in Java, 20 are common to both islands. Of 21 of Sumatra and 27 of Java, 11 are common to both islands. The remarkable coleoptera beetles found in Borneo by Mr. Wallace, were the *Neocerambyx aeneas*, *Cladognathus tarandus*, *Diurus furcellatus*, *Ectatorrhinus Wallacci*, *Megacriodes Saundersii*, *Cyriopalus Wallacci*. He collected about 2000 distinct kinds of beetles.

On every mountain-top is the pitcher plant, climbing over trees or running along the ground. The finest are on the summit of Kinibaloa; and the pitcher of the broad sort, *Nepenthes raja*, will hold two quarts of water. Another, the *Nepenthes Edwardsiana*, has a narrow pitcher twenty inches long, and grows to a length of 20 feet. Ferns are abundant. The *Vanda Lowii*, one of the Orchidaceæ, grows on the lower branches of trees. Its flower-spikes, 6 or 8 feet long, hang down to the ground, bearing large handsome flowers, 3 inches across, colours varying orange to red. The *Polyalthea* or tree-fern rises from a pyramid of roots, which descend for 70 or 80 feet to the ground below.—Wallace, i. 37, 161; *Journ. Ind. Arch.* 1845, 1849; *John's Ind. Arch.* ii. p. 265; *Quarterly Review*, No. 222; *Marryat's Ind. Arch.* p. 10; *Earl's Ind. Arch.* p. 270; *Voyage of the Menander in J. I. Arch.* 1853; *Carl Bock's Head-hunters of Borneo*; *Regering's Almanac*; *Low's Sarawak*, p. 59; *Pritchard's Researches*.

BORO or Bodo, a race chiefly found in the forest tract, 15 to 20 miles broad, between the Himalaya mountains and the plains. They entered from northern Assam along the southern side of the Brahmaputra to the Surma, and along the skirts of the Himalaya as far west as the Konki, and are also spread in large numbers over the eastern portion of the space between these two diverging lands, that is, Middle and Lower Assam, outside the forest limits, between lat. 25° to 27° N., and long. 88° to 93° 30' E. It is the northern Cachari who are said to have occupied the eastern part of Assam, and to have conquered Kamrup about 1000 years ago, spreading over Assam, Cachar, Tipperah, and Sylhet, and it is presumed as far as the present western boundary, on the north. The Rangtsa have for many centuries been intermixed with Nagas and Mikirs. The Hajong, who are found along the foot of the hills from Gauhatti to Sylhet, appear to preserve the same name. Mr. Hodgson considers that they and the Rabhas of

the same tract are Bodo. The Rangtsa, according to their own traditions, come from the N.E. of Assam, where they conquered Kamrup, and extended their sway over all Assam, Cachar, the Barak valley, and Tipperah, nearly four centuries before the Ahom invasion. The period falls within the era when Tibetans spread into the Sub-Himalayas and Bengal; and as the conquest or resumption of Kamrup by the Koch'h took place some time before the beginning of the 12th century, the event was probably connected with the decay of the Tibetan or Tibeto-Himalayan predominance. They seem to have been the principal Tibetanized tribe of Lower Bhutan. The ruling families in Hirmumba (Cachar) and Tipperah appear to have remained Cachari; and it is probable that the Cachari retained a certain degree of independence along the skirts of the Himalaya. The Hirmumba tribe call themselves Rangtsa or Ramsa, and give the same name, Ramsa, to the languages of the Cacharis of the plain; Bodo, their own tongue being called Hojo or Hojai. The Hojai, according to Mr. Grange, is totally different from that of the Cacharis of the plain.

The western branch of this tribe belongs to Behar and Bengal, and to the Sikkim and Bhutan frontiers; the eastern branch occupies Assam and Koch-Bahar. They reside in villages of from ten to twenty huts; their clothing consists of cotton and silk materials. Fermented barley, rice, or millet is used by them as a slightly intoxicating beverage, which resembles the *ajima* of the Newar of Nepal. They do not occupy a locality permanently, clearing and cropping and moving again to clear and crop another spot. A Bodo and Dhimal will only touch flesh which has been offered to the gods by a priest. The bridegroom purchases his bride either by money or labour. Polygamy is rare. There are professed exorcists among them.

The eastern Bodo in Cachar are called Borro, and are divided into the Cachari of the hill country and those of the plains. They are partly Hindu and partly pagan. Those in the plains in Assam are called Hazai, Hojai, or Hajong; are of the Hindu creed, and speak a Hindi dialect. The hill Cachari is stouter, hardier, and more turbulent, and lives in villages of from 20 to 100 houses. Like the Naga, their young men reside together in a large building. Chatgari, a frontier district between Desh Doring and the Bhutan hills, is the chief locality of the Borro of Cachar, the numbers there being about half the whole Boro population. Of the three separate people, the Koch'h, the Bodo, and the Dhimal, the faintly yet distinctly marked type of the Mongolian family is similar in all three, but best expressed in the Bodo features and form. When the Mahomedan power was established in Bengal, the Koch'h (Kocch or Kavach) kingdom extended from long. 88° to 93° E., and from lat. 26° to 27° N., from the south-eastern extremity of Nepal along the southern extremity of Sikkim and Bhutan into Assam, with Koch-Babar as its capital; and the people consisted of the present Koch'h, Dhimal, and Bodo. They dwell in the sal forests with impunity.—*Latham's Descrip. Ethn.*; *Hodgson's*. See Cachar; India; Kocch.

BORO-BODOR, a great Buddhist temple in Java, with figures similar to those in the Buddhist

temple at Gaya. It was designed by artists from the west of India, and is supposed to have been erected during the latter half of the 7th century A.D. It must have taken about 100 years to complete. Its figures show that the Buddhist Mahayana doctrines prevailed.—*Ferg.* p. 345.

BORODIA. URIA. *Bauhinia variegata*.

BOROJUAN. BENG. *Ptychotis ajwain*.

BOROKOLEE. TEL., URIA. This tree is supposed to be a species of *Zizyphus*. Planks, doors, boxes, matchlock stocks, and palanquins are made of its wood; the leaves, pounded and mixed with turmeric, are said to be efficacious in curing rheumatism; the seeds are also used medicinally in diseases of infants; the tree yields lac.—*Captain Macdonald*.

BORRERA ASHNEH, *Royle*, is the Chulchilhera lichen of the Himalaya. With ammonia it gives a reddish-brown colouring matter, and is used accordingly as a dye-stuff. Dr. J. D. Hooker found only this Borrera on the Donkia pass of the Himalaya, at an elevation of 22,000 feet; it migrates over the lofty slopes and ridges, blown about by the violent winds.—*Royle; Hook. Him. Journ.*; *O'Sh.* p. 672; *Z. in Indian Field*.

BORSIPA. See Birs Nimrud.

BOS, a genus of bovine animals. See Bovinae.

BOSCA TRINERVA. *Roxb.* A large tree of the Circar mountains.—*Rohde, MSS.; Roxb.*

BOSCAWEN, a British admiral, who in 1747 sailed for India with a great armament. On his arrival at Fort St. David, he took command of all the land and sea forces, and marched against Pondicherry, to which he laid siege on 23d June 1748, but raised it in November. In 1749 he took part in the war against Tanjore. In August he received Madras from the French, and in October returned to Britain.

BOSTAN AFROZ. HIND. *Celosia cristata*.

BOSTRICHUS. See Insects.

BOSWELLIA *glabra* and *B. thurifera* occur in India. They yield a fragrant gum-resin, called in Arabic Luban, also Kundur, supposed to be the *Λιβανος* of Theophrastus, and the *Thurea virgo* of the Romans. It seems to be olibanum, and identical with the frankincense that was used by the ancients in their religious ceremonies. Dr. Carter described and figured the frankincense tree of Arabia; and Captains Cruttenden, Vaughan, and Kempthorne have noted the presence of frankincense trees in the Somali country. Dr. Birdwood described three of these trees, with figures, and is of opinion that the frankincense or olibanum of commerce is obtained from the Somali country, and from Hadramaut in Arabia, being partly re-exported from India to Europe. He described five plants under this genus, and named the three new ones, *Boswellia Carterii* (Mohr Madow of the Somali), *Boswellia Bhau Dajiana* (Mohr Add of the Somali), and *Boswellia Frereana* (Yegar of the Somali). *B. glabra* yields a resin used as incense and as pitch. Resins analogous to olibanum are obtained from species of *Croton*, *Bailliera*, *Amyris*, *Icica*, and *Lætia* of America.—*Birdwood*.

BOSWELLIA GLABRA. *Roxb.* p. 384.

Kungli, . . . TAM. | Anduga, Gugulu, . TEL.
The Gum-resin, Olibanum.

Koondricum, MALE, TAM. | Salaec Gond, Gugal, HIND.

Captain Beddome says this fragrant resin-yielding tree is very common in many of the dry sub-alpine

jungles of the Madras Presidency, particularly on the eastern side of the presidency, on the Vellore, Cuddapah, North Arcot, and Kurnool hills; Mysore, Guzzlehatty pass, etc. etc. It grows also in Kumaon, though rare west of the Jumna, but it does not occur in Ceylon. It flowers in January and February, generally when quite destitute of leaves, and the tree is of good size. The gum-resin is the olibanum of commerce, and is much used as a fragrant incense, and (when boiled with oil) as pitch. It is said to possess stimulant, astringent, and diaphoretic properties. It is largely used in some parts of India as an application to indolent sores, and is supposed to form the chief ingredient in 'Wroughton's ointment.' It is well deserving of careful attention, and can be procured in almost any quantity. The substance is bitter and pungent, and is soluble in ether and spirits of wine. In Kumaon nothing is known of its yielding the salaec, gum-resin. Its timber is said by the natives to be of little or no value.—*Roxb.; Powell, Handbook; Econ. Prod. Punjab; Rohde, MSS.; Beddome, Fl. Sylv.* p. 124; *Mr. Thompson*. See Olibanum.

BOSWELLIA THURIFERA. *Coleb.*

B. serrata, Stach.

Canarium hirsutum, Willd.

C. odoriferum hirs., Rumph.

Kundur; Zuchir, AR., GUJ.

Bistuj, . . . DUKH., PERS.

Luban, . . . DUKH., PERS.

Awul kundur, . . . HIND.

Dup-salai, Salai lassa, . . .

Sukha Biroza, . . .

Ganda Biroza, . . . HIND.

Kundurya, . . . SANSK.

Lubanya, . . . SYRIAC.

Parangi Sambrani, TAM.

Kunduru, . . . TEL.

A large tree with pinnate leaves, which grows on the hills of the Dekhan, in the Konkan jungles, above Rajoor, in the hill of Shendur, in the Belgaum collectorate, in Bundelkhand, the mountainous tracts of C. India, Chutia Nagpur, Ajmir hills, and very common in the Shahabad country. Dr. Hooker, in ascending from Belcuppi in Behar to the height of 1360 feet, came upon a small forest of it, conspicuous from its pale bark and spreading curved branches, leafy at their tip; its general appearance being a good deal like that of the mountain ash. The gum, celebrated throughout the east, was flowing abundantly from the trunk, very fragrant and transparent. Ganda biroza is prepared from the gum-resin of this tree, and is similar in appearance and qualities to Venice turpentine. It is brought from Mewar, Haranoti, and the Shekhawatti hills, and is considered stimulating. An oil is distilled from it said to cure gonorrhoea. It is much used in painting, and by the lakheri, one maund costing twelve rupees from the Shahabad country. At Chandalgur it is termed, in the dry state, sukha biroza. *B. glabra* and *B. thurifera* both furnish the male frankincense of Dioscorides. The resin olibanum occurs in reddish or pale yellow tears, oval, oblong, and obtuse, sometimes in dense, opaque, brittle masses. The ganda biroza of the bazars is soft, ductile, opaque, greenish, and white. The odour is balsamic and resinous, especially while the resin is burning; the flavour balsamic, and rather bitter. The powder is citron yellow. It is frequently adulterated by damner, sandarach, and other cheaper resins; when chewed, the hard variety softens, and dissolves partially in saliva, which it renders white and emulsive. Used for incense; also medicinally as a stimulant, astringent, and diaphoretic in affections of the

chest, also in chronic affections of mucous membranes, but chiefly in plasters, ointments, and for fumigation.—*Royle*, p. 338; *Hooker's Him. Jour.* p. 29; *Med. Top. of Ajmir*; *O'Sh. Beng. Phar.* p. 383; *Faulkner*; *Birdwood*; *Roxb.* ii. 383; *Powell, Handbook*, i. p. 336; *Cal. Cat. Ex.* 1862; *Mr. Rohde, MSS.*

BOT, also written Bhot, the race occupying Tibet, Bhutan, Ladakh, and Balti. Their language is the oldest of the Turanian formations. See Bhot; Bhutan.

BOTA KADIMI, also Botta kadapa chettu. TEL. *Nauclea parvifolia*. The Telugu is from the resemblance of the capsule to the stamp used for impressing the bottu or sectarian marks of the Madhavacharya Brahmans.

BOTANY is the Ilm-i-Nabatat of the Persians. There has not been any branch of natural science, in its relation to the East Indies, so devotedly followed out as scientific and economic botany. Whether we regard the numbers working, the personal labour undertaken, the vast sums expended by its cultivators, or the important advantages which eastern countries have derived from them, their names ought ever to be kept in remembrance. During the past 300 years, amongst others who have worked in the East Indies, may be named, Governor Henry van Rheede, George Everhard Rumph, Leonard Plukenet, Koenig, Dr. John, Klein, Rottler, Sonnerat, Thunberg, the elder John Burmann, and the younger Nicholas Laur. Burmann, Hermann, Father Loureiro, Leschenault, Forskaol, Kimpfer, Swartz, Jack, Carey, John Gerard, Jones, Fleming, Hunter, Anderson, Berry, Heyne, Buchanan, Russell, Noton, Shuter, Govan, Finlayson, Roxburgh, Wallich, Royle, Blume, Horsfield, Spry, Voigt, Griffiths, Wight, Sir Joseph Dalton Hooker, Thomas Thomson, J. L. Stewart, Baden Powell, Hugh Cleghorn, Heber Drury, A. Moon, W. Munro, Arnot, J. E. Stocks, Edward Waring, K. Aitchison, Maclelland, Sir Whitelaw Ainslie, Sir William Hardwicke, Sir William O'Shaughnessy, Sir Stamford Raffles; Colonel Beddome, Sir George Birdwood, Edgeworth, C. B. Clarke, Clement Markham; Drs. Mason, Thwaites, Jameson, Brandis, Forskal, Don, Benthams, Bidie, and Kurz; and notices of them will be found in this work under their respective headings.

In the 18th century Madras was the great home of research. In the 19th century the botany of the Bombay Presidency was greatly advanced by Mr. John Graham, Mr. Joseph Nimmo, Mr. Law of the Civil Service, Mr. Dalzell, and Drs. Lush, A. Gibson, Murray, and Heddle. And in the Bengal Presidency, William Roxburgh, Nathaniel Wallich, John Forbes Royle reigned supreme; and many younger men are treading in the footsteps of the above.

Agri-Horticultural Societies and their gardens have been formed at Calcutta, Saharumpur, Dapoolie, Bombay, Madras, Bangalore, and Ootacamund, to attend to the introduction of new plants into India, and to the useful application of the natural products of the country.

In March 1768 a Botanical Garden was established in Calcutta, under the care of Colonel R. Kydd. In 1793 Dr. Roxburgh was put in charge; and its superintendents have been successively, Dr. Roxburgh (obit 1814), H. T. Colebrooke, Dr. Francis Hamilton, Dr. Nathaniel

Wallich, Mr. Benthams, and Assistant-Surgeon W. Griffiths.

The Botanical Gardens at Peridonia are about five miles from Kandy, in Ceylon, and occupy a considerable extent of ground.

Baron Ferdinand von Mueller, of the Melbourne Gardens, has written a volume of great value (*Select Extra-Tropical Plants*, 1880), enumerating the plants which could be beneficially introduced and interchanged between Australia and the East Indies. In the middle of the 19th century, Clement Markham, C.B., devoted years of his life, risking life and health in a residence in South America and voyaging to the Neigherry hills, in order to introduce there species of the *Cinchona* trees; and his efforts were so eminently successful, that the *Cinchona* alkaloids by 1882 were being sold at a rupee an ounce.

The total estimated number of Indian species are 12,000 to 15,000. The climate of India is generally tropical, and even on mountains of 4000 to 5000 feet the vegetation is temperate. The perennially humid forests are uniformly characterized by the prevalence of ferns; and at elevations below 5000 to 7000 feet, by the immense number of epiphytal orchidaceæ, orontiaceæ, and scitamineæ. They contain a far greater amount of species than the dry forest of North India, and are further characterized by zingiberaceæ, xyridæ, palms, pandanæ, dracænæ, piper, chloranthus, artocarpeæ, fici; urticaceæ, araliaceæ, apocynæ, shrubby rubiaceæ, aurantiaceæ, gaciniaceæ, anonaceæ, nutmegs, and dipterocarpeæ.

In the Himalaya, the truly temperate vegetation supersedes the subtropical above 4000 feet, and ascends to 12,000 feet, when it is succeeded by the alpine.

India contains representatives of almost every natural family on the globe, a very few American, Australian, and S. African orders of plants being the chief exceptions. In India the number of peculiar families largely represented in it is very limited. The Aurantiaceæ, Dipteraceæ, Balsamineæ, Ebenaceæ, Jasmineæ, and Cyrtandraceæ are the only orders which are largely developed in India, and sparingly elsewhere, and of these few contain a hundred Indian species. Sir Joseph Hooker is bringing out a descriptive work on the flora of India.

The species are much scattered. It is believed that nowhere in British India could more than 2000 flowering plants be found in a radius of 10 miles; and there is in India an almost complete absence of absolutely local plants. The plains of India are everywhere poor in species, and such as abound in individuals are usually of a weedy character. Indeed, there are few other countries in which the vegetation of the more accessible parts presents so little beauty or such short seasons of bloom. The great number of 222 British plants extend into India. Many North African and Arabian forms occur. Several Australian species are found in the Malayan Peninsula. Many of the Himalayan, Neigherries, Khassya, and Ceylon species are found in the Malay Peninsula and in Java. *Gnaththeria nummularia* extends from the N.W. Himalaya to the Java mountains; and plants common to India and Java are *Sedgwickia cernisifolia*, *Griff.*, *Marlea*, *Cardiopteris lobata*, several oaks and chestnuts, antideameæ, a willow, and *Myrica*. The Chinese type is abundant in

the temperate region of the Himalaya; and plants of N. America, west of the Rocky Mountains, also occur.

An immense proportion of annual plants, which vegetate on the last rainy seasons in the plains, and ascend the lofty mountains, are uniformly distributed throughout India. Of these the most conspicuous are graminæ, cyperaceæ, a vast number of small leguminosæ and scrophularinæ, compositæ, some labiatæ, amaranthaceæ, convolvulacæ, and acanthaceæ.

The winter months of the colder northern countries have a corresponding cold season in India, during which ex-tropical cereals, wheat, barley, and more rarely oats, with various kinds of pulse, are cultivated; and many wild plants appear, very many cyperaceæ, grasses, and such aquatics as myriophyllum, potamogeton, vallisneria, zannichellia, zerna, and others. The mountainous regions of Afghanistan are rich in Himalayan forms, and contain an immense number of European and Persian plants, which find their eastern limits within the British Himalaya; and many plants are found in those mountainous regions common to Europe and the Himalaya. Nepal, Bhutan, East Tibet, and the Khassya mountains present a flora which has much in common, and, in a geographico-botanical point of view, is one of the most important regions in India, if not in all Asia. In the Himalaya, the genera rhododendron, monotropa, pedicularis, corydalis, nepeta, carex, spiræa, primula, cerasus, lonicera, and viburnum attain their maximum of development.

In the Himalaya the truly temperate vegetation supersedes the sub-tropical above 4000 to 6000 feet, an elevation at which there generally is an annual fall of snow.

On the Himalaya, and on the isolated mountain ranges of the Peninsula of India, on the heights of Ceylon, and on the volcanic cones of Java, many plants occur, either identically the same or representing each other, and at the same time representing plants of Europe not found in the intervening hot lowlands. A list of the genera collected on the loftier peaks of Java raises a picture of a collection made on a hill in Europe. Still more striking is the fact that Southern Australian forms are clearly represented by plants growing on the summits of the mountains of Borneo. Some of these Australian forms extend along the heights of the Peninsula of Malacca, and are thinly scattered, on the one hand, over India, and, on the other, as far north as Japan. Along the Himalaya, at points 900 miles apart, glaciers have left the marks of their former low descent; and in Sikkim Dr. Hooker saw maize growing in gigantic ancient morasses. There are plants on the Himalaya and Neilgherries, Ceylon, and the Khassya mountains, and in the Malay Peninsula, and the moister and more equal parts of India, identical with those of Java. The genus calamus, orchids, araceæ, zingiberaceæ, and ferns are especially abundant; the genus grammatophyllum, the wonderful nepenthes, or pitcher plants, of which solitary species occur in Madagascar, Ceylon, the Seychelles, Celebes, and the Moluccas.

Several species of Australian genera, myrtaceæ, the leptospermum, Bæckia, and metrosideros, are found in the Malay Peninsula. The Eastern

Archipelago type forms the bulk of the flora of all the perennially humid regions of India, the Khassya mountains, the Upper Assam valley, the forests of the base of the Himalaya from the Brahmaputra to Nepal, the Malabar coast, Ceylon, and the whole of the Malayan Peninsula, many of the plants being identical with Javanese mountain species. Gualtheria nummularia ranges from the N.W. Himalaya to Java; and the more conspicuous of the trees common to Java and India are the Sedgwickia cerasifolia, Griffith, which is undoubtedly the Liquidamber altingia, Blume, Marlea, extending from China to Kashmir. The curious Cardiopteris lobata of Java is also a native of Assam; and several oaks and chestnuts, antidesmæ, a willow, and myrica, are common to Khassya and Java.

The Chinese type is abundant in the temperate regions of the Himalaya, extending westward to Garhwal and Kamaon, but is most fully developed in Sikkim, Bhutan, and the Khassya, and, as examples, are species of aucuba, Helwingia, stachyurus, enkianthus, Abelia, Skimmia, Adami, Benthamia, and corylopsis, all of them genera that have been regarded almost exclusively Japanese and Chinese; also Microptelea parviflora, Hammamelis Chinensis, Nymphaea pygmaea, Vaccinium bracteatum, Quercus serrata, illicium, thea, magnolia, the schizandrea, lardizabaleæ, camellia, deutzia, viburnum, Cornus, Houttuynia, Bowringia, Wikstræmia, daphnæ, Henslowia, scepa, antidesma, Benthamia, Goughia. Euryale ferox, which is wild in the Gangetic delta, and is found as far westward as Kashmir, is abundant in China; and Nepenthes phyllanthophora, a native of the Khassya mountains, is also found at Macao and eastward to the Louisiade Archipelago.

European forms abound in India. 222 British plants extend into India; and a multitude of mountain plants, and many of the most conspicuous ones of Europe, range from the coasts of the Levant and the Black Sea to the Himalaya, as Corylus colurna, Quercus ilex, Ulmus campestris, Celtis Australis, C. orientalis. Few European species, comparatively, extend into Nepal, and still fewer occur in Sikkim.

Egypt, southern Arabia, the warmer parts of Persia, Baluchistan, Sind, and the Panjab, have a remarkable similarity of climate. Many North African or Arabian forms extend throughout all the drier parts of India. Others are restricted to northern and western India; and though tropical Asia and Africa are separated by a vast expanse of ocean, there is a great similarity in the families of the trees and shrubs; and an affinity can be traced between the mountain vegetation of western tropical Africa and that of the peninsular chain.—Royle on the Productive Resources of India; Wight's Prodromus Floræ Indiæ; Hooker et Thomson's Introductory Essay to the Flora Indica; Darwin, Origin of Species; Wallace; Ind. Ann. Med. Science.

BOTERO. Giovanni Botero, an Italian, in A.D. 1550, was the first European author who treated of the tea-plant. His book was written to indicate the causes of the splendour and wealth of cities.

BOTLA BENDÄ. TEL. Abutilon Indicum.

BOT-PA, a race occupying Ladakh, or Little Tibet. They speak the Tibetan language, and are Buddhists, with a hierarchy of monks called Lama.

BO-TREE, ANGLO-SINGH, Ficus religiosa, grows

all over India. One of these is to be found within the precincts of every Buddhist temple in Ceylon, and it is frequently met with in deserted localities, or near the sites of ancient villages, and there the occurrence of a solitary Bo Tree, with its circular buttress of stonework round the stem, indicates the existence, at some former period, of a Buddhist temple in the vicinity. The planting of the Bo Tree in Ceylon, a ceremony coeval with and typical of the introduction there of Buddhism, is one of the most striking passages in the 18th chapter of the Mahawanso, entitled 'The obtaining of the Bo branch;' and the 19th chapter describes the arrival of the Bo Tree. A tree of unusual dimensions, which occupies the centre of a sacred enclosure at Anarajapoor, is still revered as the identical one which the sacred books record to have been planted by Mahendra 250 years before the Christian era, consequently in the year 1900 it will be 2150 years old. So sedulously is it preserved, that the removal of a single twig is prohibited; and even the fallen leaves, as they are scattered by the wind, are collected with reverence as relics of the holy place.

When Asoka, 250 B.C., sent his son Mahendra and his daughter Sangamitta to introduce Buddhism into Ceylon, one of the most precious things which they carried with them was a branch of that celebrated pipal tree beneath which Sakya became a Buddha, and which is still growing from the top of a small pyramid at Gaya. It was received with the utmost reverence by Devanampiyatissa, and planted in the most conspicuous spot in the centre of his capital. There it has been revered as the chief and most important nimen of Ceylon. The city is in ruins, its great daghobas have fallen to decay, its monasteries have disappeared; but the great Bo Tree still flourishes; annually thousands repair to the sacred precincts within which it stands, to offer up prayers for health and prosperity. On the altars at the foot of the sacred Bo Tree, the Buddhists place offerings of flowers and perform their accustomed devotions.—*Tennent's Ceylon; Tennent, Christianity in Ceylon; Hardy's Eastern Monachism.*

BOTRYCHIUM VIRGINICUM. This large succulent fern grows plentifully in the Raklang pass in the Sikkim Himalaya. It is boiled and eaten, both there and in New Zealand. Other ferns are used for food. In Calcutta, the Hindus boil the young tops of a Polypodium with their shrimp curries; and both in Sikkim and Nepal the watery tubers of an aspidium are abundantly eaten. So also the pulp of one tree-fern affords food, but only in times of scarcity, as does that of another species in New Zealand, the *Cyathea medullaris*. The pith of all is composed of a coarse sago, that is to say, of cellular tissue with starch granules.—*Hooker, Him. Jour.*

BOTRYTIS BASSIANA. See Dry Rot.

BOTTA, French consul at Mosul, in 1842 began excavations on the sites of the buried cities of Assyria. He commenced his labours at Kouyunjik, a large mound opposite Mosul. Along with Mr. Layard, he made large researches, and during the entire period of his excavations, M. Botta sent to Mr. Layard not only his descriptions, but copies of the inscriptions.—*Layard's Nineveh.*

BOTTA-GENDA. GOND. *Spilornis cheela*.

BOTTA KADAPA CHETTU. TEL. *Nauclea parviflora*. The name is taken from the resemblance

of the capsule to the stamp used for impressing the botta or sectarian marks of the Madhavacharya Brahmans.

BOTTLE GOURD, *Lagenaria vulgaris*.

BOTTLES.

Butli, Budla, ANG.-HIND.	Buddigal, . . .	TAM.
Bottiglie, Fiaschi, . . .	IT.	Budlu, . . .
Kacha, buli, balang, MAL.		TEL.

Skin or glass or stoneware vessels for holding liquids are of various shapes and sizes. The leather budla in which the people of India carry ghi and oil, is manufactured in many places by stretching skins over a clay model, which is afterwards broken and shaken out.

BOTTLE TREE, *Delabechia rupestris* of Australia. It is one of the order Sterculiaceae. It attains a height of 35 to 55 feet, with huge branches at the summit, and the bark rugged. The foliage is small in comparison with the great size of the tree. The interior substance of the tree abounds in a mucilage resembling gum-tragacanth. The circumference of the trees, measured 7 feet from the base, is from 12 to 35 feet. The trees grow very luxuriantly in a soil of sand or sandy loam, and are often tapped by stockmen and others, who procure from them a glutinous and refreshing beverage. Large-sized trees scooped out form excellent canoes. It should be introduced into India. See *Brachychiton*.

BOTTU. TEL. The sectarian marks of the Madhavacharya Brahmans.

BOTTU KURA. TEL. *Cordia polygama*.

BOT YUL, the Tibetan name for Tibet.

BOUCEROSIA AUCHERI. DUC.

Chungi, Char-ungli, HIND.	Pawanne, Pauwauke,	
Panjangushit, . . .	PERS.	PANJ.

This plant is found in the N.W. Himalaya, Trans-Indus, and Salt Range up to 3000 feet. Its stems, four or five inches long, resemble the fingers of the hand, are juicy, generally eaten raw, and deemed medicinal.—*Dr. J. L. Stewart.*

BOUCEROSIA EDULIS. Edgeworth.

Chung, Pippa, . . .	PANJ.	Pippa, Sittu, Situ, PANJ.
Suhi Gandhal, . . .		

Stem used as a relish for farinaceous food; not uncommon in the arid tract from the Salt Range southward to the boundary of the Panjab, and in Sind.—*Edgeworth; Dr. J. L. Stewart.*

BOUGHTON, GABRIEL, surgeon of the E.I. Company's ship *Hopewell*; about the year 1639 was summoned to the Dekhan from Surat to attend on a daughter of Shah Jahan, who had been severely burned. He asked as his reward liberty for the E.I. Company to trade in Bengal free of duties. Orme says he was sent for that purpose from Surat to Agra. The patient recovered; and the emperor, besides other favours, granted him a sunnud to trade free of customs throughout his dominions. Boughton proceeded to Bengal, on reaching which the nawab obtained his aid in order to attend on one of his favourite women, who recovered. Boughton remained in the nawab's service, who gave him and the English the right to trade; and Boughton induced the Company to send, in 1640, two ships.—*Broome, Hist. of the Bengal Army*, London, 1850; *Orme*, ii. p. 8.

BOULMAJA, a stone procured from the hill state of Dhenkanal, in Orissa, used to make small mortars and the little tripods on which sandalwood is ground by natives.—*Cal. Cat. Ex. 1862.*

BOURA CHANG, a fish of Bhutan, believed by

the natives to fall from heaven, from the circumstance of its being found after rain far from the water.

BOURBON, also called Reunion and Mascarenhas, is an island of a round form above 42 miles from N.W. to S.E. A volcano near its S.E. part, is in lat. 21° 9' S. It is larger than the Mauritius; but it is only a great mountain cleft in three places, and clothed with wood, though portions below are cultivated. It was discovered by the Portuguese, who called it Mascarenhas. The French took possession of it in 1675. It was captured 10th July 1810 by the British, but restored at the general peace. Bourbon cotton is *Gossypium Barbadense*, *Roxb.*, and Bourbon Tacamahaca, *Calophyllum inophyllum*.—*Horsburgh*.

BOURDONNAIS, La, sailed for India when only 14 years of age. He became the governor of Mauritius and Bourbon in 1734. He returned to France; but in 1746 he revisited India, had an encounter with the British fleet, and on the 10th September he captured Madras, which capitulated, but was ransomed on the 10th October. He sailed for France, but was captured on his way. He was shortly after released, in consideration of his lenient treatment of Madras; but on arriving in France he was thrown into the prison of the Bastille, where he lingered for three years and died. Duplex was jealous of him, and caused his imprisonment. He introduced cotton and indigo into the Mauritius.

BOURO ISLAND, one of the Moluccas. It is high, and has a semicircular mountain on its N.W. part. The island has two races; the larger number are Malays of the Celebes type, often exactly similar to the Tomore people of East Celebes, who are settled in Batchian; but the other, a taller, bearded race, resemble the Alfura of Ceram. Amongst its birds are two kingfishers, *Tanyptera acis* and *Ceyx cajeli*; a beautiful sun bird, *Nectarinea proserpina*; and a black and white flycatcher, *Monarcha loricata*.—*Wall*.

BOVIDÆ, a family of mammals, comprising the sub-families Antilopine, Caprine, and Bovine.

The Antilopine have been enumerated under their own heading; the others are as under:—

Sub-Fam. Caprine, goats and sheep.

Nemorhædus bubalina, *Jerdon*.

N. proclivus, *Hodys.* | *Antilope thar*, *Hodys.*

Sarao, saroowa, . . . HIM. | Thar, . . . NEPAL.
Ramu, . . . KASHMIR. | Eimu, . . . SUTLEJ.

The serow or forest goat occurs in the central ranges of the Himalaya, from Kashmir to Sikkim.

Nemorhædus goral, *Jerdon*.

Antilope Duvaucellei, *H. Smith*.

Ra-giyu, . . . BHUT. | Suh-ging, . . . LEPCH.
Goral, . . . HIM. | Sah; Sarr, . . . SUTLEJ.
Pjur, . . . KASHMIR.

The goral or Himalayan chamois occurs in the whole range of the Himalaya from Bhutan and Sikkim to Kashmir.

True Goats.

Hemitragus jemlahicus, *Jerdon*.

H. quadrinammis, *Hodys.* | *Capra jharal*, *Hodys.*

Taro, tehr, tahir, . . . HIND. | Jharal, . . . NEPAL.
Kras, Jagla, . . . KASH. | Jehu, . . . SIMLA.
Kart, . . . KULU. | Eahu, Eshi, . . . SUTLEJ.
Jula (m), thar, tharni, KUN.

The tehr or Himalayan wild goat inhabits the whole of the Himalaya.

Hemitragus hylæcrius, *Jerdon*.

Kemas, *Ogilby*. | *Capra warrayato*, *Gray*.

Ibex, . . . NEILGHERRIES. | Warra-ada watu, . . . TAM.

The Neilgherry wild goat occurs there and in the neighbouring hills in the W. Ghats, south to Cape Comorin.

Capra megaceros, *Hodgson*.

C. Falconeri, *Hagcl*.

Ra-cho; Ra-po-cho, . . . LAB. | Mar-khor, . . . PUSHT.

The Mar-khor inhabits the Pir Panjal range of the Himalayas to the south of the valley of Kashmir, in the Hazara hills, and the hills on the north of the Jhelum, the Wurdwan hills, the Sulimani range, Ladakh, and Afghanistan.

Capra Sibirica, *Meyer*.

C. Sakeen, *Blyth*. | *Ibex Himalayanus*, *Blyth*.

C. Pallasi, . . . | Tangrol, . . . KULU.

Skin, Sakyn, Iskin, Sakin, . . . HIM. | Buz, . . . SUTLEJ.

Kyl, . . . KASH. | Dan mo (f.), . . . TIB.

The Himalayan ibex occurs from Kashmir to Nepal in the Himalaya.

Ovis cycloceros, *Hutton*.

O. Vignoi, *Blyth*.

Uria, urial, . . . HIND. | Koch, Kuch, SUL. HILLS.

The urial or Panjab wild sheep occurs in the Salt Range, Sulimani Range, Hazara hills, and hills near Peshawur, at from 800 to 2000 feet elevation.

Ovis Vignei, *Blyth*.

O. montana, *Cunningham*.

The Sha or Sha-poo of Tibet.

Ovis nahuia, *Hodgson*.

O. Nahoar, *Hodys.* | *O. Burhel*, *Blyth*.

Bharal; Bharur, . . . HIM. | Nervati, . . . NEPAL.

Menda (m.), . . . " | Wa, War, . . . SUTLEJ.

Na, Sim, . . . LADAKH.

The burhel or blue wild sheep is from Sikkim to near Simla.

Ovis Ammonii, *Linn.*

O. argali, *Pallas*. | *O. Ammonoides*, *Hodys.*

O. Hodgsoni, *Blyth*.

Hyan, nuan, nyan, niar, nyund, gnou, of Tibet. It is found beyond the great central snowy range on the Tibet side, never under 15,000 feet in summer.

Ovis Polii, *Blyth*, the rass or rush of the plains of Pamir, east of Bokhara, at 16,000 feet.

Sub-Fam. Bovine, cattle.

Gavæus gaurus, *Jerd.*, *gaur*.

Bibos cavifrons, *Hodys*, *Ell.* | *B. assel*, *Horsf.*

Bos gour, *Truill.* | *B. aculeatus*, *Cuv.*

Vana-go, . . . BENG. | Gauri-Gai, . . . HIND.

Ban-gau, . . . " | Jangli Khulga, . . . " "

Pyong, . . . BURM. | Gaoya, . . . MAHR.

Kar-Kona, . . . CAN. | Ban-parra of MUNDLAH.

The Gaur Bison, . . . ENG. | Bod of . . . SEONI.

Peroo-mao, . . . GOND. | Katu Yemi, . . . TAM.

Gour, . . . HIND.

Bison of Madras sportsmen. All the large forests of India.

Gavæus frontalis, *gaya* or *mithun* of the hilly tracts east of the Brahmaputra.

Gavæus sondaicus, the *ban-teng*, is the Burmese wild cow of Chittagong, Burma, and Malaya. It is the tsoing of the Burmese.

Bos Indicus, the zebu or humped cattle, known as the Brahmany bull, is wild in the Guntur district of the Madras Presidency, in parts of Oudh and Rohilkhand, and maintain themselves in dis-

tricts infested with the tiger. They have been domesticated in India and the Archipelago.

The Buffaloes.

Bubalus Arni, *Jerdon.*

Bos arni, *Kerr, Shaw.*

B. buffelus, *Blyth.*

Mung of . BHAGULPUR.

Gera erumi, . . . GOND.

Arna (m.), Arni (f.), HIND.

B. bubalus, *Anderson.*

Jangli bhyus (m.), HIND.

„ mhyus (f.), „

Occurs wild in Assam, in the Terai from Bhutan to Oudh, in Central India from Midnapur to Rairpur, in the Purniah district, and a few in the N. and N.E. of Ceylon. The domesticated species is little changed from the wild buffalo.

BOVRA KORRO. PERS. A large desert partridge in northern Persia; *Pterocles exusta*.

BOWRING, SIR JOHN, K.C.B., governor of Hong-Kong, but best known as an author by his political and literary writings. He was born at Exeter 17th October 1792, and became, in early life, a pupil of Jeremy Bentham, maintaining his master's principles for some years in the Westminster Review, of which he was the editor. He wrote Bowring's Siam, and a work on the Philippine Islands. Obiit 1872.

BOWSTRING HEMP, fibre of *Sansevieria Zeylanica*. Very tenacious fibre; the natives make their best bowstrings of it.

BOXWOOD, *Buxus sempervirens*, *Wall.* This is a valuable wood of a yellowish colour, close-grained, very hard, and heavy; it cuts better than any other wood, and is susceptible of a very fine polish. It was highly valued by the ancients as a material for musical instruments. It is of use for the turner, engraver, mathematical instrument maker, comb and pipe maker. The Himalayan box, *Buxus sempervirens*, *Wallich*, appears to be identical with the tree common all over south Europe, and extending into Persia, chiefly in valleys, at an elevation of from 3000 to 6000 feet. Dr. Stewart met with it from Mount Tira, near Jhelum, to Wangtu bridge on the Sutlej. It is variable in size, being generally 7 to 8 feet high and the stem only a few inches thick, but attaining sometimes a height of 15 to 17 feet, as at Manikarn in Kulu, and a girth of 22 inches as a maximum. It is found in the valleys of the Sutlej, Parbati, and near Dharmasala, and in the Salt Range. In the Nepal valley it is larger and more abundant than in other parts of the Himalaya. It is made by the villagers into little boxes for holding ghi, honey, snuff, and tinder. It is in demand for plugs for Minie rifle balls, and at Sealkote it is turned into pill boxes. The wood is liable to split in the hot weather, and should be seasoned and stored under cover. Thunberg says that *B. sempervirens* was not uncommon in Japan, in a wild and cultivated state. The annual consumption in Great Britain exceeds 2000 tons, half of which is of foreign growth. The wood of *Sarcococca trinerva* also gets this name. The Karens sometimes furnished Mr. Mason with specimens of a wood that can scarcely be distinguished from the boxwood of Europe. *Nauclea cordifolia* has wood coloured like that of the box tree, but much lighter, and at the same time very close-grained. Dr. Hunter highly praises the wood of the *Euonymus dichotomus* of the Pulney hills.—*Jour. A. H. Soc.* xi. 413, 1859; *Cleghorn, Panjab Rep.; Statistics of Commerce; Thunberg's Travels; J. L. Stewart; Powell's Handbook; Hunter; Royle.*

BOY, an Anglo-Indian term applied to a native domestic man-servant, supposed to have come from Bhui, the name of a Teling tribe.

BOYA, plural Boyadu or Boyidu, also Boyi. TEL. A mountaineer, a forrester; was a title of some Teling chieftains, as Avare-Boyidu, Mara-Boyidu, Gondla-prote Boyidu.

BOYAR, a race widely diffused in the hilly parts of Palamau, Sirguja, Singrauli, Korea Bhakhar, Rewa, and other places. They cultivate millets and pulses on the virgin soil of newly-cleared forests. They live in small hamlets or detached houses. They bury their dead, depositing with each body of a male an axe, a knife, and a bow and arrow. The Boyar are generally of a dark-brown colour, fairly proportioned, and averaging upwards of five feet in height. The features have great breadth across the cheek-bones, very narrow forehead, nose broad, nostrils wide apart, the nasal bone more prominent, the mouth so wide as nearly to equal the space occupied by both eyes, lips protuberant, chin receding, but not so the brow, more hair on the face than is generally found amongst the tribes of this class.—*Dalton, Ethnol.* p. 134.

BOYHIA or Boiggial, a race in the southern Mahratta country, whose sections take the name of Bhaka, Holga, and Berdur. The Bhaka again subdivide into the Ramusi, Yadu, Roray, and Gurgal. The four branches of the Bhaka constitute one people apart from the Holga or the Berdur. They are hardy, active, and enterprising, but predatory, covetous, rapacious, and treacherous.

BOZAH. HIND. A fermented liquor obtained from Eleusine coracana, and somewhat resembling country beer. It is chiefly used in the higher provinces of India, but the materials used in brewing or fermenting it vary in different places. The *Sorghum vulgare* is occasionally used, and it is occasionally made more intoxicating by the addition of drugs.—*Ainslie's Mat. Med.* p. 263.

BOZDAR, a border tribe on the N.W. frontier of India, with about 2500 fighting men. They dwell west of the Derajat, in the hills opposite Mungrota, about 50 miles north of Dehra-Ghazi Khan. After a series of troublesome incursions on the plains, a force was sent against them in March 1857, through the Mahvi and Mungrota passes, and, after seeing their green crops destroyed, and seeing the Osterani, a small but warlike tribe, join the British, one morning the Bozdar chiefs rode into the British camp and sued for peace. They were received in solemn durbar; and for every man they had slain in their forays 125 rupees were paid, and 50 rupees for every wounded man, this being the regular price of blood in the hills. A few months afterwards, they furnished a contingent to protect the frontier when the troops were sent to quell the mutiny of 1857. This Baluch tribe occupy the mountains and the low country, and have the following sections—Schrani, Suwarni, Gulamanni, Jelalani, Chandiah, and Shahani. From the Kuranee limits the hills of the Bozdar tribe extend along the British frontier for about 15 or 20 miles. The range is intersected by some nine passes leading into the plains, the chief of which is the Sungurh pass, through which there is considerable traffic with Kandahar and the Panjab. Opposite these hills lies the Sungurh lowland (forming the upper portion of

the Dehra-Ghazi Khan district and cultivated by several peaceful tribes), and very much at the mercy of the Bozdars. There is only one Bozdar village in the plains, but there is much scattered cultivation belonging to the tribe. Almost the whole tribe and their chiefs live in the hills. They can muster 3000 or 4000 fighting men, some portion of whom are horsemen. They were probably the most formidable robbers in this part of the frontier. Under the Sikh regime they repeatedly carried fire and sword into the Dehra-Ghazi Khan district. The direct and main pass which leads into the Bozdar country is the Sungurh pass, opposite the Munghrata, the one by which Sir N. Chamberlain's force entered. The Sukhi Surwar pass is below Dehra-Ghazi Khan, in the Loggharri (Baluch) country, between which and the Bozdars there is also another Baluch tribe, the Khosabs. The Chachar pass, again, is still further lower down, near Hurrund, and more distant still from the Bozdars.—*Meilley's Year's Campaigning*.

BOZGAND, also Bozghanj. HIND. Galls of *Pistacia terebinthus*, said to be flower-buds dried.

BOZIDAN, also Bozaidan. HIND. *Asparagus sarmentosus*, *A. racemosus*.

BRAA. HIND. *Colutca arborescens*.

BRAB TREE, *Borassus flabelliformis*.

BRACELET.

Bracelet, Brassar, . . FR. | Braccialetto, smaniglia, Ir.
Armband, GEN. | Brzalette, Sr.
Khangni; Rakhi, HIND. |

Bracelets, anklets, and armlets of gold, silver, brass, copper, and deer horn, the metals being solidly massive or in the form of chains, are in use in all eastern countries, amongst Hindus and Mahomedans. Occasionally a grown man of the Hindus may be seen with a small gold or silver arm-ring or anklet, but in general they are restricted to women and children. The custom has doubtless obtained through all ages; and they are alluded to in Genesis xxxviii. 18; Isaiah iii. 19. Those of some of the Hindus are inconveniently massive, and heavy rings, usually of silver set with a fringe of small bells, are often worn by Hindu ladies. The brass ornaments of the Santal women weigh several pounds. Allusion is made in Scripture to a tinkling with the feet. Hindu women wear loose ornaments one above another on their ankles, which, at every motion of the feet, produce a tinkling noise. Armlets are worn alike by Hindus and Mahomedans, and by men and women; are of gold or silver; some are in the form of massive carved rings, some as locketts, the more expensive worn by royalty are their bazu-band, literally arm-binder. These are generally worn as ornaments, since the most ancient times, like earrings (Gen. xxxv. 4; Exod. xxxii. 3, 4; Hos. ii. 13; Judg. viii. 25). The *Euryia* in aures were often of gold, like those of the Ishmaelites; but ornaments were often anklets containing, as with the Mahomedans, charms, their tavis, or, like the Jangam sect of Hindus, the phallic lingam. These ornaments are often worn round the neck, like the golden bulla and leathern torum of the Roman youth, and as in Prov. vi. 21, and most women have frontlet ornaments, such as are alluded to in Deut. vi. 8.

The bracelets largely worn in India by all Hindu and Mahomedan women are of coloured glass, ornamented with lac and brass or tinfoil; some of the colours are beautiful; the manufacture of

shell bracelets is one of the indigenous arts of Bengal, in which the caste of Sankhari at Dacca excel. The chanks of which they are made are large univalve shells (*Turbinella pyrum*) from six to seven inches long, and of a pure white colour. They are imported into Calcutta from Ramnad in Southern India, and from the Maldivé Islands. At Dacca these shells are used for beetling fine muslins, but principally for making the large massive bracelets which are worn by Hindu women. They are sawn into semicircular pieces, and these are riveted and cemented to form the bracelets, some of which are elaborately carved, and inlaid with a composition of lac and a red pigment. A pair of bracelets of this description frequently costs as high as 80 rupees. Of the thick pieces of the shells, beads are made to form the necklaces, which the Bengal sepoy wear.

Some Marwari women and the Binjara women have the entire forearm from the wrist to the elbow covered with heavy massive bracelets, and the lower part of the legs equally covered with anklets. The armlets of the Binjara women are of deer-horn. Amongst the Rajputs, the women adopt a brother by the gift of a bracelet. The intrinsic value of such pledge is never looked to, nor is it requisite it should be costly, though it varies with the means and rank of the donor, and may be of flock silk and spangles, or gold chains and gems. The acceptance of the pledge and its return is by the Katchli, or corset, of simple silk or satin, or gold brocade, and pearls. Colonel Tod was the Rakhi band Bhai of the three queens of Udaipur, Boondi, and Kotah, besides Chund-Bai, the maiden sister of the Rana, as well as of many ladies of the chieftains of rank. Though the bracelet may be sent by maidens, it is only on occasions of urgent necessity or danger. The festival of the bracelet (Rakhi) is in spring. The adopted brother may hazard his life in his adopted sister's cause, and yet never receive a mite in reward, for he cannot even see the fair object who, as brother of her adoption, has constituted him her defender.—*Tod's Travels in Rajasthan*. See Phylactery; Talsam; Taviz.

BRACHIOPODA, a class of molluscs, comprising the families Terebratulidæ, Spiriferidæ, Rhynchonellidæ, Orthidæ, Productidæ, Craniadæ, Discinidæ, and Lingulidæ. See Mollusca.

BRACHYCHITON DELABECHEI, Australian bottle tree, trunk similar to a soda-water bottle. The natives refresh themselves with the mucilaginous sweet substance, and make nets of its fibre.

BRACHYPTERNUS AURANTIUS. Linn. The orange-coloured woodpecker of Ceylon. *B. Ceylonus* and *B. rubescens* also occur there.

BRACHYPTERUM SCANDENS. Benth. A creeper of Coromandel, Konkau, Travancore, Siam, Bengal, and Assam, with small pale rose fragrant flowers, well adapted for trellis work.

BRADDOCK, LIEUTENANT, a Madras officer, wrote on balances for delicate weighing in the Mad. Lit. Soc. Trans.; On the Assay of Silver; On the Induration of Chunam; On Chemical Tests; On the Sculptures at the Seven Pagodas.—*Dr. Buist's Catalogue*.

BRADLEY, DR. W. H., a Bombay medical officer, who wrote a statistical memoir on Circar Dowlatabad in Mad. Lit. Trans. xvi. p. 481; A Statistical Memoir on the Circar of Pytun, *ibid*.

235; On the Meteorology of Ellichpur, Bom. Geo. Trans. 1844, 1846, vii. p. 167; Desultory Observations on the Gond Tribes, with a Vocabulary of the Language spoken by them, *ibid.* 209; Some Account of the Topography of Chikuldah, *ibid.*—*Dr. Buist's Catalogue.*

BRAGANTIA WALLICHII. R. Br.

Apama siliquosa. [Alpini, . . . MALLAL.

A shrub of the natural order Aristolochiaceae, growing in the western parts of the Peninsula of India, the S. Konkans, Wynad, and Travancore. It is about 3 feet high; root and leaves demulcent and tonic. The root is supposed to be an antidote to poison, and is used in snakebites and applied to ulcers. B. tomentosa is intensely bitter, and used as medicine in Java.—*Drury, Useful Plants.*

BRAHM, or Para Brahm, SANSK., the Supreme Being, is a name that first appears in Hindu religious books, in some of the best upanishads, or appendages to the Vedas, of later date than the first three, and introducing a different and superior theology. It seems to have been a first effort towards the recognition of a Creator; and many Hindus of the present day recognise that the almighty, the infinite, the eternal, incomprehensible, self-existent being, he whose power is too infinite to be imagined, is Brahm! creator, preserver, and destroyer of the universe, from whom all souls come, and to him again return. While the learned Brahmins thus acknowledge one God, they have confined their doctrines to their own school of philosophy, and have tacitly assented to, even taught in public, a religion in which the most discordant fictions have been erected, and have woven a mythology of the most extensive character. A philosophic few excepted, Hindus are worshippers of a superstitious and idolatrous polytheism, and Hindus erect no altars to Brahm (*Hindoo Pantheon*, p. 4). The Narayana of the present Hindus is rather the Spirit of God (*Ins. of Menu*, chap. I., v. 10), though the two Hindu sects claim for Vishnu and Siva the title of Narayana, and Brahma himself is sometimes called Narayana. At present there will not be found two Hindu families whose belief is identical, though almost all the educated of the people recognise one God under one name or another. From time to time great reformers rise, condemning the prevailing Hindu idolatry, and so anxious are the people to know the truth, that every new teacher immediately gathers round him a number of disciples. But it is without the basis of a recognised revealed religion, and the zeal of the pupils soon calms down. In the meantime the bulk of the Hindu people are engaged in spirit-worship and hero-worship; in the worship of the manes of ancestors; in the worship of plants and animals; of the inanimate objects of nature and of natural phenomena, of forms of men and women, and of shapeless blocks of stone and wood. Some forms of Hindu belief are systems of rationalism, others are systems of philosophy, and others are physiological doctrines, with emblems to illustrate views entertained as to cosmogony and production which take the place of religion. The human form in its natural state, or possessing the heads or limbs of various animals, the elements, rivers, fountains, stones, and trees, have been deified, and become objects of religious adoration. The sun, moon, and all the heavenly host; fire, earth, and all natural phenomena,—all nature, indeed,—the

passions and emotions of human beings, their vices and virtues, are transformed into persons, and act appropriate parts in the history of man.—*Taylor; Moor, Hindoo Pantheon; Coleman; Wilson.* See Upanishad.

BRAHMA, a word supposed by some to be from the Sanskrit 'vrih' or 'brih,' to increase. Brahma occurs in a hymn of the Rig-Veda, and, according to Dr. Haug, this word originally meant the strewing of the sacrificial grass on the spot appointed for the immolation. One of the earliest meanings of the word, as used in the Veda, was 'food,' also riches. In the Rig-Veda, a more frequent meaning is sacrificial food. But in the same work Brahma is repeatedly used to express the song of the soma singers, a magic spell; and is applied to ceremonies having a song of praise as their characteristic. In the language of the Zendavesta, 'baresman,' an absolutely identical word, is found, which the Parsees interpret to mean a bundle of twigs tied together with grass, used in the fire-worship like the bundle of kusa grass used by the Brahmins in the soma sacrifices. In both worships the bundle is a symbol of 'growing,' 'increase,' or 'prosperity'; and the name of the symbol was transferred to the texts, hymns, sacrifices, and ceremonies used in the rites. 'As sacrifice among the Vedic Hindus was the chief means of obtaining all earthly and spiritual blessings, but was useless without the Brahma, i.e. success, the latter was at last regarded as the original causes of all being.' The Imperial Gazetteer says Brahma means a prayer; and Brahman, a praying person.

Brahma, with Siva and Vishnu, form the triad of Hindu deities. There is nothing extant to show either that Brahma ever had much consideration shown him, or that his worship was overwhelmed by the intrusion of the Vaishnava and Saiva religions. Brahma in former times is said to have had temples the same as Siva and Vishnu, and to have been worshipped separately, but the followers of the two last are said to have entirely destroyed the temples and worship of Brahma. Brahma alone of the three is mentioned by Menu (*Kennedy's Researches*, p. 270). He seems to have had some sort of pre-eminence in ancient times, but there is no evidence that he was ever much worshipped. According to Colonel Tod, he has now but one temple in India (*Tod's Rajasthan*, vi. p. 774); and though invoked in the daily ritual, his separate worship is almost entirely neglected. His Sakti or consort, Saraswati, has not fallen so completely out of notice. A figure of Brahma is shown in a temple at Gumli, three-faced, seated cross-legged on two hausa, with two female attendants, and to his right is Siva, three-faced, with Nandi below, and two females.

A Saiva legend, in the Tamil book Arunasala Puranam, is to the effect that Brahma and Vishnu endeavoured to overthrow the religion of Siva; that Vishnu abandoned the attempt, and Brahma was overpowered, and condemned to have neither temple nor worship for evermore. Also the Brahma-koond, in Brindapur, is a little square tank, supposed to be of natural excavation, and regarded as the sacred spot of Vishnu's triumph over Brahma. In Benares they make Vishnu worship Siva. In Brindaban they make Brahma worship Vishnu, to assert the superiority of sect over sect (*Tr. of Hind. ii.* p. 65). At the present

day, Brahma is worshipped or revered at Bittur on the Ganges (Oudh Census, p. 114). He is particularly revered at Pushkara, near Ajmir, as also at Bittur in the Doab, where, at the Brahmavarta ghat, he is said to have offered an Aswa Medha on completing the act of creation. The pin of his slipper is still worshipped there. On the full of the moon Agrahayana (November and December) a mela or fair, a meeting that mixes piety with profit, is annually held at that place.—(Wilson.) There is no doubt that he is the least important, at the present day, of the Hindu deities, though termed the creator, or the ancestor of gods and men. He has been imagined to correspond with the Saturn of the Greeks and Latins. He is usually represented as a red or golden-coloured figure with four heads. He is said, by the Saiva sect, to have once possessed five; but as he would not acknowledge the superiority of Siva, as Vishnu had done, that deity cut off one of them. He has also four arms, in one of which he holds a spoon, in another a string of beads, in the third a water-jug (articles used in worship), and in the fourth the Veda or sacred writings of the Hindus. He is frequently attended by his vahana or vehicle, the hansa, a goose or a swan.—*Moor's Pantheon*; *Toul's Rajasthan*, vi. p. 774; *Somnerat's Voyage*, p. 5; *Kennedy's Researches*, p. 270; *Hindu Theatre*, ii. p. 58; *Travels of a Hindoo*, p. 65; *Sir G. Campbell*, p. 61; *Wilson*; *Oudh Census*, p. 114.—*Imp. Gaz.*

BRAHMACHARYA. SANSK. The state or period of pupillage of a Brahman, Kshatriya, Vaisya, or Sudra youth, who is thus called a Brahmachari. It is also applied to men who are mendicants, but affect to be students. Mr. Sherring says this name is given to a sect of Brahman ascetics who wear red cloth and the rudraksha, let their hair and beard grow, and besmear their bodies with ashes. They are worshippers of Siva. The Brahmacharis live as recluses apart from their families, and at death their bodies are burnt.—*Sherring's Tribes*, p. 265.

BRAHMA DANDA PURANA, a religious book of the Hindus, the object of which is similar to that of the Skanda Siva Purana and Linga Purana, viz. to inculcate the worship of the lingam. See Lingam.

BRAHMADANDI. SANSK. Argemone Mexicana.

BRAHMADICA, supposed by Hindus in their mythology to be the first created beings; but in their cosmogonies their origin and names are variously explained. It is said, in the Institutes of Menu (chap. i. 32), that the Almighty Power, having divided his own substance, became male and female, and from that female produced Viraj. Viraj produced the first Menu, named Swayambhuva; he, the ten Brahmadica or Prajapati, whom he calls the ten lords of created beings, also the sons of Brahma. They produced seven other Menu, whose names were Swayambhuva, Swarochesha, Uttama, Tamasa, Rivata, Chacshusha, and Satyavrata. These Menu are by some authorities said to have produced the seven Rishi; but others state the seven Rishi to have sprung immediately from Brahma. Their usual names are Kasyapa, Atri, Vasishtha, Viswamitra, Gautama, Jamadagni, and Bharadwaja.—*Wilford*, *As. Res.* v. p. 246. The seven Brahmadica are, however, according to Coleman, named Marichi,

Atri, Vasishtha, Palastia, Angiras, Palastia, and Kritu. Colonel Wilford, in the Asiatic Researches, has considered the Brahmadica, the Menu, and the Rishi to be seven individuals only. The names of some of the Brahmadica correspond with those of some of the Rishi.—*Cole. Myth. Hind.* p. 8. In an account of Viraj, translated by Mr. Colebrooke from the White Yajur Veda, it is said He (the primeval being) felt no delight; therefore man delights not when alone. He caused his own self to fall in twain, and thus became a husband and wife, and the human race was produced; and, changing their forms, all created beings appeared. Another account makes Rudra assist in the theogony. Brahma said, 'Rise up, O Rudra, and form man to govern the world.' Rudra immediately obeyed. He began the work, but the men he made were fiercer than tigers, having nothing but the destructive quality in their composition, and they soon destroyed one another, for anger was their only passion. Brahma, Vishnu, and Rudra then joined their different powers, and created ten men, whose names were Nareda, Daksha, Vasishtha, Bhriгу, Kritu, Pulaha, Pulastya, Angira, Atri, and Marichi (that is, Reason, Ingenuity, Emulation, Humility, Piety, Pride, Patience, Charity, Deceit, Morality), the general name of whom is the Muni. Brahma then produced Dharma, Justice, from the breast; Adharma, Injustice, from his back; Labha, Appetite or Passion, from his lips; and Kama, Love or Desire, from his heart. The last was a beautiful female, and Brahma looked upon her with amorous emotions; but the Muni telling him she was his own daughter, he shrank back, and Ladja, Shame, a blushing virgin, sprang from him. Brahma, deeming his body defiled by its emotions towards Kama, purified himself by partially changing it into ten females, who were respectively espoused by the ten Muni.—*Moor, Hindoo Pantheon*, p. 91; *Colebrooke*; *Wilford, As. Research.* v. p. 246; *Coleman, Mythology of the Hindoos*, p. 8; *Menu*, i. 32.

BRAHMAGUPTA. Colebrooke thinks that Brahmagupta and the author of the Sūrya Sidhanta were contemporary about the seventh century, A.D. 628, of the Christian era. Brahmacharya and Brahmagupta are supposed by some to be one and the same astronomer, the inventor of the system disclosed in the Sūrya Sidhanta; by others to be two distinct commentators of that shastra.—*Capt. E. Warren, Kala Sanhita*.

BRAHMAKUND, in lat. 27° N., and long. 96° E. It is a pool 70 feet by 30, twelve days' journey up the Lohit, into which several minor streams break over a precipice. It is considered by Hindus as sacred a spot as Gangotri, and it was at one time largely resorted to by pilgrims.

BRAHMA-LOKA. SANSK. The abode or heaven of Brahma. In the Buddhism of Ceylon, it is the highest of the celestial worlds, sixteen in number.—*Hardy*, p. 434.

BRAHMAN. This is written Brahmana, but the final a is dropped in conversation. It is the designation of the highest of the Hindu castes, whom it is usual to call the priestly class. Their duties, according to Menu, are—(1) Performances of holy sacrifices; (2) assisting at the performance of such by others; (3) reading the Vedas; (4) teaching the Vedas; (5) making gifts; (6) accepting gifts. If any of these means of existence failed, they were permitted to resort to certain

trading occupations, being restricted, however, as to the articles in which they might trade. But now-a-days Brahmans employed in sacerdotal functions are considered to be in a degraded position. The author of the Gita says, 'The prescribed duties of the Brahmans are peace, self-restraint, zeal, purity, patience, rectitude, wisdom, learning, and theology' (Gita, p. 130). The word Brahman, according to Weber, means drawing forth, as well in a physical sense 'producing,' 'creating,' as in a spiritual sense 'lifting up,' 'elevating,' 'strengthening' (Weber).

The Maha-brahman of Hindustan, who performs unceremonial ceremonies, is deemed so unclean that other Brahmans will not touch him. Gunga-putra or Ghat Brahman is a byword; and the Panda or temple priests, the Barna Brahmans who conduct the worship of the lower castes, the Gyawal and Prayagwal who rule over the ceremonies connected with pilgrimages to Gya and Allahabad, the Ojhas exercising the vocation of wizards, the Dayahagya, the Ganak, and the Jaudi Brahmans who cast horoscopes and predict events, are all looked upon by other Brahmans as lower classes. Menu writes in high-flown terms (Instit. chaps. ii. iii. vii. viii. ix.) of the sacred character of the Brahman learned in the Vedas, but comments with an equal severity on the unlearned of this class.

There are ten great divisions of Brahmans, viz. five Gaur, the Kanya-Kubhya, Saraswat, Gaur, Maithala, and Utkala; and five Dravidian, viz. Dravida, Telinga, Karnata, Maharashtra, and Gurjara. These have many subdivisions. The Gaur tribe, for instance, has 56 branches; the Kanoujia are divided into Sarwaria, Sanaudha, Jijhotia, and Bhunhar, and these again have subdivisions. Some of the subdivisions' names are taken from the district to which they originally belonged, others are named from their sects, or literary acquirements. The Chaturji of Bengal are so named from their acquaintance with the four Vedas, Chaturpadhya. The Chuckerbutty of Bengal are the Chakravarti, meaning a prince or ruler. Sinarta is the name of a religious sect of Brahmans founded by Sankaracharya, whose expositions of the principle of unity, according to the Vedanta doctrine, they professedly follow. Siva is held by them in especial honour.

Brahmans are also recognised as of three classes, viz. Loukik or secular; Vaidik or theologian; and Bhikuk, whose sole means of support is the alms obtained by begging.

The Brahman as a distinct class seems to be first mentioned in the Atharva Veda, the oldest of the Vedas. They were known before the great war between the Kaurava and Pandava, but were seemingly in humble positions. Arjuna disguised himself as a Brahman when he competed at the Swayamvara of Draupadi, and won her, as he hit the golden fish with his arrow after all the rajahs had failed. Draupadi became the wife of the five Pandu brothers.

The great bulk of the Brahmans of India are admittedly of Aryan origin,—tall, robust men, and light yellow in colour. In the Tamil and Telugu countries of Southern India, the recognised Brahmans are all undoubtedly of the same stock. Some of them can converse in Sanskrit, although they use the vernacular language of the district in which they reside, and are styled Dravida,

Kerala, and Karnatica, etc., with reference to the language of their district. Brahmanical tribes are as much separated as are other castes. Some of them may eat together, but they do not intermarry; and the first approach at union is seemingly to be with the Konkan, Mahratta, and Gujerat Brahmans, amongst whom the influence of European knowledge has had more effect than upon any of all the other races in India. Good seed has fallen there on a good soil; and from a body of mendicants, these have become active, powerful, and useful men.

There are Brahmans in the hills north of the Panjab, in the extreme N.W. of India, occupying both the valley of Kashmir and the hills immediately to the west and south of it. Kashmir itself is a Brahman country,—all its people, though long since converted to Mahomedanism, having been of the Brahmanical race. The educated class there, who maintained their own tenets and are still very numerous, are known as pandits, and form quite an aristocracy. They are all educated, are exceedingly clever, and are an excessive and somewhat oppressive bureaucracy, which has ruled Kashmir under every successive government, and has sent out colonies to seek their livelihood in Northern India. The features of the Kashmir Brahmans proclaim them to be one of the highest and purest races in the world. They are of quite high Aryan type, very fair, handsome, with chiselled features. In many the nose is high and slightly aquiline, but not Jewish; but in others the nose is straight. Their brow is a little more raised and their nose more arched than in the Greek statues. The ordinary Kashmiri has a strong athletic figure, but none of them are martial; and the Brahmans in these respects correspond,—they rule by the brain and pen. They have a greater refinement and regularity of feature than the Afghans and others of a rougher type, with, however, a less manly-looking physique, a colour less ruddy, and more induced to a somewhat sallow fairness. The Kashmir Brahmans eat meat, and are excluded by the Indian Brahmans alike from the five Gaur and from the five Dravid, and form a separate Brahmanical class, being more secular than the priestly Brahmans of Hindustan and the Dekhan, than whom they are altogether looser in their observances.

Kashmiri pandits are known all over N. India as a very clever and energetic race of office-seekers; as a body, they excel in acuteness the same number of any other race with whom they come in contact. Almost all the secular pandits use the Persian character freely. They are perfectly versatile, and, serving abroad, will mount a horse, gird on a sword, and assume at a push a semi-military air.

The lower classes of Kashmir have long since been converted to Mahomedanism, but they seem to be ethnologically identical with the Brahmans; and tradition asserts that they are of the same race.—Campbell. The Brahmans of Kashmir are regarded by those of Bengal as of an inferior order, and the agricultural Brahmans on the Saraswati banks are similarly regarded. Brahmans are numerous in Kamaon and Garhwal, where education is more advanced and the Nagri character used. People of Brahmanical origin, approximating to the Panjabi, but in language, habits, manners, and dress quite different from the Kashmiri, dwell in the hills between Kashmir and

the Panjab, but they have abandoned the Hindu religion, and are now partly Sikhs and in part Mahomedans. Their language is a dialect of the Panjabi. They are good soldiers. Mr. Campbell thinks that the Brahmans of the frontier hills are even handsomer than the Kashmiri, the people in general of these hills being the handsomest of the human race. Bamba dwell in the hill frontier beyond the Jhelum. They are of Brahmanical origin, but now profess Mahomedanism. On the eastern side of the Jhelum the hills are shared with other races by a numerous tribe of Sikhs, converts from Brahmanism. Their Brahman ancestors became converts to the Sikh religion before it became a political power, and entirely threw off their Hinduism. They are very useful soldiers and servants. There are some Brahmans at the foot of the N.W. Himalaya. They are not found beyond the Indus, but are pretty numerous in part of the Rawal Pindi district. South of the Salt Range, in the plains, the Rajput and Jat occupy the country. But there are villages of agricultural Brahmans in the fertile plains under the hills in the districts of Sealkote, Goordaspur, and in the valleys of the broken country between Husearpur and Kangra, and in parts of the Umballa district and the adjoining Simla hills. They are not numerous near the source of the Saraswati; but lower down its course, in the somewhat desolate countries of Marwar and Jeysulmir, where the lands are moist, the Brahmans are still numerous, and are good cultivators, and claim to have occupied the country before the Jats and Rajputs became dominant.

In Central India, the town of Palli seems to be a Brahmanical centre. The Marwari or Saraswati Brahmans form a considerable portion of the most industrious of the cultivators in Malwa. The Saraswati Brahmans seem to have kept much to the tenets of their forefathers. They are called in the south, Kashastale Brahmans. The oldest of the Brahmanical race are the people of the upper hills in the western Himalayas, who date from a time anterior to Hinduism. The Kashmiri were a civilised and literary Brahmanical people, not yet fully Hindu. The Saraswati Brahmans were the earliest, most simple, and pure Hindus of Vedic faith; and those of the Ganges and the rest of India are in various phases of modern Hinduism. There are ten classes of Saraswati Brahmans, who are supposed to come from the N.W. of India.

In the Panjab, Sind, and countries about the Saraswati, having been superseded by other races, there are few Brahmans, except in the eastern part of those tracts, where they are industrious cultivators, and claim to be the ancient occupants of the country.

Hindustan.—The main country of the Brahmans is that part of Hindustan lying between the Vindhya on the one side, and the Himalaya on the north, from the longitude of Kanouj and Lucknow to near the frontiers of Bengal, with a large segment of more especially Rajput country cut out of the centre of this tract. The Brahmans of Hindustan are generally good-sized, and, on the whole, well-looking men, with good features, not particularly fair. They are not of the high Aryan type. The greater number are quite illiterate. The priests and pandits have never adopted

the Persian writing character. They are not very clever, have little social position, but serve humbly as soldiers and servants about courts and jails.

From the Gulcheter down to Dehli, and in the country about Dehli, there are Brahman villages, quite industrious and intelligent, the women working as well as the men; but Brahmans do not form a large proportion of the agricultural population. They were kind to and protected fugitives during the mutiny. Some of the less pure agricultural Brahmans of these parts are called Tuga or Gaur Tuga. All the Dehli country is occupied by Gaur Brahmans. South of Dehli, in the Jaipur country, Brahmans are numerous; and in the Saharunpur districts there are a good many Brahmans following secular pursuits, besides the priests of Hurdwar.

About Benares and the greater part of Behar are a numerous class of Brahmans called Bahman or Bhaban, or, according to Sir H. Elliot, Bhounhar, to which the raja of Benares and all the great landholders of Behar belong.

Brahmans are many in the Banda district, and numerous in Baghelcund or Rewah, and there they condescend to very menial vocations, and groomed most of the horses on the Jubbulpur road. In the proper Brahman country, some of them affect the Rajput prejudice against actually holding the plough; though performing every other agricultural labour, and take the names of Dobi, Tewari, and Chaubi, i.e. men with a knowledge of two, three, and four Vedas, and are considered to be of very high caste. Between the Ganges and the Gogra, as we recede from the Ganges, the population becomes more Rajput than Brahman, but there are many Brahmans about Ajodiah, the old Oudh. Beyond the Gogra is a numerous Brahman population, humble, not soldiers. Thence to the north of the Gogra and Ganges, all the way to Tirhut, there are many Brahmans. South of the Gogra, and thence across the Ganges into the Arrah district (Bojpur), runs the Rajput dominions.

The Tuga Gaur Brahmans seem to be identical with the Bhuinhar, and the Bengali Tagores (properly Thakur) may be an offshoot from them. Like the Bhuinhar, the regular Brahmans repudiate all connection with them; and Mr. Beames even says there seems no reason for supposing them to be anything but low Aryans.

Bengal.—The Brahmans of Bengal are numerous. They claim for themselves a northern origin, but they differ much from the Hindustan Brahmans in language, dress, and habits. They are fairer and larger than the mass of the Bengali population, and some are fine-looking men in size and feature. They are largely employed as clerks and accountants, in learned professions, merchants and bankers, sharing the scriptory work with Kayasths. They are acute and intellectually capable, but not energetic. In Bengal about nine per cent. of the Hindu prisoners in jails are Brahmans. They will not put their hands to the plough, are aristocratic, but altogether unwarlike and effeminate, and in mercantile business are not equal to the Marwari. They are not numerous in Eastern Bengal. There are many in Orissa and in the Urya portion of the Ganjam district. Many of the Urya Brahmans are cultivators and traders, and are stated to be also brickmakers and bricklayers.

In Gujerat, the Brahmins are numerous, and are employed in public offices and in trade.

In the Peninsula, the Brahmins are numerous from Damaun to Goa, and from Bombay to Nagpur and the Wain Ganga, that is, all through the Mahratta country. They principally trace their got or clan from Kasyapa, the first Rishi. There are two classes intermixing here,—the Konkani Brahman and the Mahratta Brahman. *Mahratta* Brahmins are a highly intellectual race, and have been distinguished as accountants and clerks. Some of them, as Peshwas, put aside the descendants of Sivaji, ruled over the greater part of India, and took the command of Mahratta armies. The *Mahratta* or Deshasth Brahmins are dark, swarthy men, much shorter than the Konkani Brahman, often squat, with large, coarse features, large lips, and becoming in advancing life unwieldy. The men are not good-looking, and the women are decidedly plain. The men are largely engaged in public offices as accountants and clerks. They are stolid men, inactive, and of sedentary habits, with literary tastes, and may be justly proud of their poets.

The *Konkani* or *Konkanistha* Brahmins belong to that small strip of land lying between the Syhadri mountains and the Indian Ocean. They are all fair men, not large, but with lithe and agile frames, and decidedly of Aryan descent. They are good-looking, though in this respect inferior to the Afghan and Rajput races; and their women are fair and have pleasing countenances, with good figures, but even by their own relations are not considered to be equal to other of the women of India, amongst whom the fair Jewesses of Western India may be quoted. The race were agricultural until the British became supreme. The men are ready to move abroad in search of employment, and are met with amongst the Mahratta nation, throughout Berar, and are largely employed in the various public offices as accountants, clerks, in the educational department, and in mercantile houses. They are not military nor agricultural, nor do they engage in trade. The Konkani Brahman has a pleasant expression, is easily moved to laughter, much enjoys a joke, and is of an active turn of mind. They are easily distinguishable by the peculiarly large turbans which they wear.

Konkani and Mahratta Brahmins eat together, but do not intermarry. They do not marry in their own tribe or got; but the Mahratta Brahman will marry his mother's sister's daughter, and the Konkani Brahman will not marry a relative unless very remotely related.

The Mahratta or Deshasth Brahman is a reserved man, little inclined to seek friendships, and rarely seen to laugh. They at one time filled almost every office under the Peshwa and under the British, and even in Madras till the middle of the 19th century the revenue accounts were kept in Mahrati by these Brahmins; and in their own country they were zamindars, deshmookhs, and deshpandi, and almost all the village accountants were Deshasth Brahmins. Both these castes have to compete for employment with the writers known as Purbhu (Prabhu), of which there are two classes, the Patri Purbhu and the Kayasth Purbhu.

Canara, Mysore.—Mr. (Sir George) Campbell mentions (pp. 74, 130) that in the N. Canara district, in the high hilly country above and about the ghats,

and on the adjoining parts of Mysore, there is a large population of Brahmins, industrious and thriving cultivators and landowners. Most of these are called Haiga Brahmins, and the culture of the betel-nut is their especial pursuit. They are very fair, with large eyes and aquiline noses. In the Nagar district of Mysore they are very numerous, not very literary or highly educated, but devoted to agriculture.

In *South Canara* and the *Tuluva* country are many Brahmins, who do much cultivation; and all down the west coast to the extreme south of India, the country is said to have been extensively colonized by Brahmins led from Calpee by Parasarama.

They have been, from political and hostile circumstances, much removed from Malabar, but they are very numerous in Travancore and Cochin; and in the Palghat valley they are numerous, and are industrious and good cultivators.

Travancore.—On the south-west coast the chief class of Brahmins are the Namburi, who have some very peculiar customs, but they principally engage in priestly offices. The Namburi Brahmins resemble the Nair and the Hindu population of the S.W. coast, but are fair.

Brahmins are scattered through *Telingana* and through the *Tamil* country, all tall, fair, and portly men; are aristocratic, do not engage in any menial avocation, but restrict themselves to priestly offices, to clerking in Government establishments; but in these the Sudra Naidu or Naik of Telingana, and the Mudali and Pillay Sudra of Tamil districts, and Vaisya Chettyar, East Indians and Portuguese, descendants of Europeans, largely compete with them.—Mr. (Sir George) Campbell, pp. 57-67.

In the festival of Bhaubij, on the 2d day of the month Kartik, the wives of all Brahmins, whether of the Saiva or Vaishnava sects, worship their husbands, standing before them, sacrificing with the lamp and ghi, and pouring rice over their heads.

In Canarase-speaking countries the Brahmins are largely employed as accountants and office clerks. They are much disliked by the Virasaiva lingaets. A village of lingaets near Kaldgi abstained from digging a well in their village, to avoid attracting Brahmins amongst them.

Among the population of Southern India, out of a total population of about 32 millions, over one million belong to the Brahman caste,—547,027 males and 548,418 females. In 1871, of the 547,027 male Brahmins in the Madras Presidency, 332,934 were occupied as follows:—

Professional,	Government Civil Service,	8,887
	Military or Police service,	747
	Learned Professions,	18,499
Domestic,	Minor	55,504
	Personal service,	19,584
Commercial,	Traders,	12,910
	Conveyors,	909
Agricultural,	Cultivators,	132,443
	Dress,	165
	Food,	1,778
	Metals,	20
Industrial,	Construction,	55
	Books,	40
	Household goods,	18
	Combustibles,	11
	Labourers,	5,384
Indefinite and Unproductive,	Property,	64,545
	Unproductive,	15,529
	Others,	1,898

Over 24 per cent. are agriculturists, and over 11 per cent. are classed as deriving income from property. In the southern districts, especially, a large proportion of the Brahmans are agriculturists. In Tinnevely over 40 per cent. of them come under this head. But as a rule these Brahmans do not work with their own hands in agricultural pursuits, and employ labourers to till the ground. In the northern districts and Tanjore the Brahman landowners figure chiefly as owners of land, and as deriving their income from property.

Avocations and Customs.—Among the earliest functions of the Indian priestly tribe was that of Purohita, or house-priest attached to a princely household. But their character and avocations have altered with changing circumstances. The descriptions in the Vedas show us a primitive race of shepherds and husbandmen praying to the gods for the safety of their flocks and crops, but as the Arians came into India they seem to have risen above manual labour; and Menu (iii. 165, iv. 5) even denounces agriculture as absolutely degrading. There are, however, in Orissa numerous Brahmans who cultivate vegetables, but they are stigmatized as yam-growers, also lokik or worldly Brahmans; also brickmakers and bricklayers. In the Himalaya, in Chamba and near Dalhousie, they are shepherds. In Kangra, the Doab, and Benares, Brahmans guide the plough. In Central India there are peasant Brahmans; and in Southern India Brahmans are to be seen as betel-leaf growers and fishermen; while throughout the Tamil and Telugu countries they are to be found as blacksmiths and goldsmiths, who wear the sacred thread, and refuse precedence to the recognised Brahmans; and in Ceylon the descendants of an imported race, the *Goi Bamano*, are cultivators.

Almost every Indian province contains two or more distinct classes of Brahmans, descendants of different immigrations. The Chamba Brahman shepherds are a fierce, stalwart race, very fair, and their women singularly handsome. In the *Simala hills* the Brahman population consists indiscriminately of shepherds, husbandmen, day-labourers, cooks, and menials. In the inner hills they marry the widows of their elder brothers, like the lower castes of Orissa, and sell their daughters into a slavery faintly disguised by the name of concubinage. The *Patiala* Brahmans engage as day-labourers and are palanquin-bearers. Bishnuvi cultivators and graziers are numerous in Dhat; some in Chore and in Oomerkote, Dhar-nas, and Mitti.

In Benares and the districts along the Ganges to the southward, a large peasant population claim the title of Brahman; and their claim was recognised by the native governments exempting them from capital punishment. The Buinhar or Babhan of Behar, a peasant Brahman, number three-fourths of the whole Brahman population of the Bhagulpur district. They resemble the ordinary husbandmen.

There have been at times large manufactures of Brahmans by rulers. Some princes have imported Brahmans from distant localities, and other princes have raised lower castes to the dignity of Brahmans. Jeypore has a class of ploughing Brahmans, as regards whom a tradition relates that a warlike prince required a vast concourse of priests to give dignity to his sacrifice, and accord-

ingly created five tribes of Brahmans out of the surrounding populations. They migrated into Ondh, where also is one of the Brahmanical families, who derive their origin from a prince whose self-importance would not allow him to offer sacrifice until he had 125,000 priests in attendance, and who accordingly invested the common people of the country with the sacred thread. In Behar the mass of the peasant Brahmans attribute their origin to a manufacture of a hundred thousand priests in prehistoric times. In Malabar, Parasurama made the whole fisherman population into Brahmans. They claim a very exalted rank. The Konkani Brahmans also are descendants of a fisher race; and to the present day the casting of a net and the catching of a fish form part of their wedding ceremonial.

Adisur, the founder of the Sen dynasty, brought from Kanouj five Sagnic Brahmans of the tribes or gotra, Sanhita, Kashyapa, Vataa, Saverna, and Bharudwaja. Several Sudra families, Ghose, Bhose, Dutt, Guha, Mittra, etc., accompanied them, and these take the position of Kulin Kayasths. In the reign of Bullal Sen, about 284 years before the Mahomedan invasion, all these Kulin Brahmans and Kulin Sudras had greatly increased, and, though degenerated in learning, they arrogated to themselves a position above all the Sapta-sala or aboriginal Brahmans; and Bullal Sen ennobled those Brahmans by giving to them the title of Kulin. The Kulin Brahman subsequently consented to marry the daughters of the aboriginal Brahman, who eagerly seek alliances with the Kulin; and the Kulin have taken advantage of this, and have established a scale of fees for condescending to accept a daughter of an inferior. They marry gold. Of the Kayasths who came from Kanouj, Bhose, Ghose, and Mittra were ennobled by Bullal Singh into Kulin Kayasths, and are still in Bengal. The Dass, Day, Dutt, Guha, Kar, Paulit, Sen, and Sing hold a second rank.

Kulin Brahman women are married with difficulty, and generally to aged men. In 1868 there were 11 Kulin men in Hoogly and 1 in Bardwan, each of whom had contracted 50 to 80 marriages; 24 in Hoogly and 12 in Bardwan, who had contracted from 20 to 60 marriages; and 48 in Hoogly and 20 in Bardwan, who had contracted between 10 and 20 marriages. Kulinism is thus a great polygamic institution, and a few Kulin women have become prostitutes. In 1867 the abolition of this polygamy was contemplated, and will doubtless soon be carried out (*Cat. Rev.* May 1868).

Agnikotra Brahmans are the remnant of the worshippers of Agni, who still preserve the family fire, but in other respects conform to some mode of popular Hindu devotion. According to prescribed rule, where a perpetual flame is maintained, it is used to light the fire round which the bride and bridegroom step at the marriage ceremony, and the funeral pile of either; but the household fire is preserved only by this particular sect, the Agnikotra, and the great body of the people have nothing of the kind. In this case they distinguish between the sources whence they obtain the kindling flame according to the purposes of its application, and the fire of the marriage rite is taken from the hearth of a respectable person, or from a fire lighted on some auspicious occasion; whilst for the funeral pile any unpolluted fire may be used. It is only necessary to avoid taking it from

another pile, or from the abode of an outcast, of a man belonging to the tribe of executioners, of a woman who has lately borne a child, or of any person who is unclean.

The *Agnicula* was a supposed Scythic race, whom the Brahmins, in order to oppose the Buddhists, formed into a religious confederacy.

Aradhya Brahmins profess the Jangam creed, but adhere to their caste views. They are chiefly in the Canarese country. In other sects of Hindus, the Brahman uniformly take precedence of other castes; but among the Jangam or Vira-Saiva he is degraded beneath all others. Hence there is a perpetual feud between the *Aradhya* Brahman and the Jangams, who (unless at funerals, where all are bound to assist) treat these Brahmins with contempt (*Brown on the Creed and Customs and Literature of the Jangams*, p. 8).

The emigration of the Brahmins to peninsular India appears to have been subsequent to the first great change in their religious system. The religion they introduced was probably a rudimental form of Saivism, with a tendency to the mystical and mythological system of the Puranas. There is not the least reason to suppose that the Vedic or elementary system was ever known in the Tamil country, either as an indigenous religion or as introduced by the Brahmins.

The Brahmins deeply impressed Alexander by their learning and austerities. One of them, Kalanos by name, was tempted, notwithstanding the reproaches of his brethren, to enter the service of the conqueror. But, falling sick in Persia, Kalanos determined to put an end to his life. Alexander, on hearing of his philosopher's resolve, vainly tried to dissuade him; then loaded him with jewels, and directed that he should be attended with all honours to the last scene. Distributing the costly gifts of his master as he advanced, wearing a garland of flowers, and singing hymns, the Brahman mounted a funeral pyre, and perished in the flames.

The Brahmins of the present day are a race of the highest culture, the result of 3000 years of hereditary education and self-restraint, and they have evolved a type of mankind quite distinct from the surrounding population. Even the passing traveller in India marks them out alike from the bronze-checked, large-limbed, leisure-loving Rajput or warrior caste of Aryan descent, and from the dark-skinned, flat-nosed, thick-lipped, low castes of non-Aryan origin, with their short bodies and bullet heads. The bulk of the Brahmins stand apart from both, tall and slim, with finely-modelled lips and nose, fair complexion, high forehead, and slightly cocoanut-shaped skull,—the man of self-centred refinement. He is an example of a class becoming the ruling power in a country, not by force of arms, but by the vigour of hereditary culture and temperance. One race has swept across India after another; dynasties have risen and fallen; religions have spread themselves over the land, and disappeared. But since the dawn of history, the Brahman has calmly ruled, swaying the minds and receiving the homage of the people, and accepted by foreign nations as the highest type of Indian mankind (*Imp. Gaz.* vol. iv.).

Brahmanism is the ordinary designation of the Hindu religion at present prevailing. It is accommodating to anything that partakes of

idol-worship; similarly as a Roman would worship Isis and Osiris, so a Hindu makes offerings to apotheosized Mahomedans, such as Shaikh Sadu, Ghazi Mian, and Shaikh Madar in Northern India; and throughout all India there are multitudes of figures of local divinities who have been admitted into the Hindu Pantheon as avatars of Vishnu or Siva, the chief gods of the modern Hindus. The Vaishnava doctrine raises Vishnu to the highest place, and adores his different avatars, together with a multitude of other deities, powers of nature, and mythical persons. The Saiva doctrine places Siva highest in the rank of the gods. The professors of this doctrine number many millions more than the professors of Vishnuism. Although Siva is the god of destruction, he is also the god of reproduction, considered with respect to the idea, which ever pervades the doctrine of Brahma, namely, that death is but the recommencement of a new life. Vedantism, so named after the Vedanta of Vyasa, has few adherents, consisting of some philosophical Brahmins. Of the thousands of temples in India consecrated to various deities, only one, it is said, is consecrated to this doctrine, in which Brahma is worshipped alone.

Various ceremonies are attendant upon Hindu boys between infancy and the age of eight years. After that age, and before a Brahman lad is fifteen, it is imperative upon him to receive the poita, yadnupavita, zonar, janavi, or jhandiam, the sacred thread, which the Brahmins in their secret ceremonies call Yadnupavita. In the investiture, the priest offers a burnt sacrifice, and worships the salagrama, repeating a number of prayers. The boy's white garments are then taken off, and he is dressed in yellow or red, and a cloth is brought over his head, that no Sudra may see his face; after which he takes in his right hand a branch of the vilva, *Ægle marmelos*, and a piece of cloth in the form of a pocket, and places the branch on his shoulder, with shoes on feet and umbrella in hand. A poita of three threads, made of the fibres of the suru, to which a piece of deer's skin is fastened, is suspended from the boy's left shoulder, falling under his right arm, during the reading of the incantations or invocations. The father of the boy then repeats certain formulas, and in a low voice pronounces three times, the Gaitri, O'm! Bhurbhuvāssuvāhā, O'm! Tatsa vit'hru varenniyām, B'hargo devāsyā dhimahi dhiyo yonaha pracho dayath. O'm! earth, air, and heaven, O'm! 'Let us meditate on the adorable light of the divine Sun (Savitri), may it guide our intellects.' After this prayer the suru poita is taken off, and the real poita, or sacred thread, put on. The receiving of the poita is considered as the second birth of a Hindu, who is from that time denominated 'dwija' or twice-born. A Brahman boy cannot be married till he has received the poita. The sacred thread must be made by a religious Brahman. It consists of three strings, each ninety-six bat'h (forty-eight yards), which are twisted together; it is then folded into three, and again twisted; these a second time folded into the same number, and tied at each end in knots. It is worn over the left shoulder (next the skin, extending half-way down the right thigh) by the Brahman, Kshatriya, and Vaisya castes. The first are usually invested with it at eight years of age, the second at eleven, and the Vaisya at twelve.

The period may, from especial causes, be deferred; but it is indispensable that it should be received, or the parties resisting it become outcasts. An individual is not fully a member of this class until he have assumed this emblem. It is like the Roman lad's assumption of the toga virilis.

A *Kulin Brahman* can marry as many wives as he likes; but there are certain Brahmins in Bengal who find the greatest difficulty in getting married to even one wife. These are the *Bangshaja Brahmins* of the *Shrotriya* class. While a *Kulin Brahman* gets for every wife that he marries a handsome bribe, a *Bangshaja Shrotriya Brahman* has to pay down a large sum of money to the father of the girl whose hand he seeks to obtain. The consequence is that, owing to their poverty, numbers of *Bangshaja Shrotriya Brahmins* never get married at all. To remedy this evil, in Eastern Bengal, when in any village the number of unmarried *Shrotriya* becomes inconveniently large, one of the *ghatak* of the place—those under-servants of *Bidhata* who take a prominent part in all marriages—goes to *Shribatta* in *Sylhet*. There, with the assistance of his agents in the district, and by means whether fair or foul, he procures a number of girls, to whom he holds out the prospect of a pleasant settlement in life. The girls may not all be *Brahman* girls, some of them may be of the *Chandal* caste, and others may be young widows; but whatever may be their caste, character, and antecedents, they are huddled together in a boat, often fifteen or sixteen in number, and taken to the *ghat* of the *Shrotriya* village. The faces of the old *Shrotriya* bachelors become lighted up with joy, when they hear of the arrival of the *hymeneal* boat. The sensation which these highly-favoured boats create in Eastern Bengal, is infinitely greater than that produced in *Calcutta* by the orange-boats of *Sylhet*, or the mango boats of *Malda*. The *Bangshaja* bachelors besiege the boat in numbers. Each one selects a girl according to his taste, a bargain is struck with the *ghatak*, and the celebration of the rites of marriage, according to the forms prescribed in the *Shastras*, soon follows. The plain-looking girl, for whom no *Shrotriya* may have a fancy, is employed as a maid servant either of the *ghatak* himself, or of any other who may stand in need of her services.

The influence on India of the *Brahman* races has been great. They developed a noble language and literature. They were the priests and the philosophers of their race; also the lawgivers, administrators, men of science, and poets. They have brought the mass of the backward races into the social and religious organization of Hinduism. They wrote the *Vedas*, *Brahmanas*, *Sutras*, and *Upanishads*, meaning the science of God and his identity with the soul; the *Aranyakas*, or tracts for the forest recluse; and the more recent *Puranas*, or traditions. The six *Darsana*, or schools of philosophy—*Sankhya*, *Yoga*, (3, 4) *Yedanta*, (5) *Nyaya*, and (6) *Vaisesika*—originated from them. They treated philosophy as a branch of religion. They had also a circle of the sciences, the Science of Language. *Panini*, B.C. 350, was the founder of *Sanskrit* grammar. Under every dynasty and government in India, *Brahmins* have held the highest executive offices alike in the civil executive and in the political administration of the country, for, until the middle of the

nineteenth century, all learning and science centred in them. The introduction into India, by the British, of the western forms of education, and the system of grants-in-aid to schools, however, have permitted, particularly in the south of India, all the *Sudra* and *Vaisya* races to compete with the *Brahmins*, who are being largely displaced from their former exclusive position, though they are still a great power in the state.

There is no being more aristocratic in his ideas than the secular *Brahman* or priest, who deems the bare name a passport to respect. The *Kulin Brahman* of Bengal piques himself upon his title of nobility, granted by the last Hindu king of *Kanauj* (whence they migrated to Bengal), and in virtue of which his alliance in matrimony is courted. But although *Menu* has imposed obligations towards the *Brahman* little short of adoration, these are limited by him to the learned in the *Vedas*: he classes an unlearned *Brahman* with an elephant made of wood, or an antelope of leather,—nullities save in name.

Owing to the segregation which all the Hindu races practise, *Brahmins* have never formed a compact body, and their influence and power have been local. Learned *Brahmins* are much respected. At festivals, weddings, and feasts for the dead, they are invited to the houses of the wealthy, are feasted, treated with honour, and on their departure receive gifts of value, dresses, gold and silver vessels, ornaments of numerous kinds, food, and also money. A man of learning often takes one or more of his scholars to such assemblies, both to enhance his own reputation and to accustom them to respectable society; and the students also obtain a share of the presents. From gifts of this kind the larger number both of teachers and students in the Hindu schools of learning are supported, their food procured, and their house accommodation provided. *Tolas*, or native colleges of this kind, are scattered all over the province of Bengal, and one or more may be found in all the great villages. The *Zillah* of *Bardwan*, for example, though not particularly celebrated for learning, contained, a few years ago, 190 *Sanskrit* schools and 1350 students. Some places are more celebrated as seats of learning than others. In North India, for instance, *Nuddea*, *Santipur*, *Tirhut*, and above all *Benares*, contain a large number of colleges. In South India they are chiefly found in the provinces of *Tanjore* and *Madura*. These schools are divided into three classes,—those wherein general literature is studied, the schools of law, and those of philosophy. In the first the subject-matter of study embraces grammar, lexicology, poetical works, and rhetoric. According to *Bunsen*, *Brahmins* have systematically adulterated and adjusted the early history of India (iii. 513). *Brahmins* were acquainted with the *Talmud*; and Sir W. Jones thought that *Genesis* ii. 21, 23 is referred to in the form of *Siva* and *Parvati*, known as *Art'hanavari*, of which the right hand half is *Siva* and on the left hand *Parvati*.—*Brown on the Jangams*; *Bunsen's Egypt*, iii. 513; *Chow-Chow*, p. 44; *Mullen's Hindu Philosophy*, pp. 10, 11; *Coleman's Mythology*, p. 154; *Calcutta Review*, May 1868; *Tod's Rajasthan*, i. p. 512; *Taylor, Mackenzie MSS. Bhagavad-Gita*; *Sir George Campbell's Ethnology*; *Bowring's Ethnology in B. As. Soc. Jo.*; *Darwinism in Morals*, p. 279; *Hunter's Orissa*; *Imp. Gaz.*; *Moor's*

Pantheon; Weber's Indian Literature; Wilson's Glossary.

BRAHMANA, Sanskrit prose works, of later date than the Vedas; the oldest is the Aitareya, which has much historical information. The several Brahmana are chiefly liturgical, ritualistic, and legendary, and, in the various Upanishad, passing into the rationalized state, and becoming metaphysical and mystical. Their professed objects are to teach the sacrifice; they appeal continually to earlier authorities, and evolve their dogmas under the guise of free Mimāṃsā or discussion. They are the work of several individuals, and Professor Müller limits their age to the two centuries from B.C. 800 to 600, if not prior thereto. Each of the Saṁhitās or collection of hymns has its Brahmana, and these generally maintain the essential character of the Veda to which they belong. The Rig-Veda has the Aitareya Brahmana, also the Kaṁshitaki or Sankhayana; the Yajur-Veda, in its Taittiriya Saṁhita, has the Taittiriya Brahmana; and its Vajasaneyi Saṁhita has the Satapatha Brahmana. The Sama Veda has eight Brahmanas, and the Atharva one.—*Weber; Müller; Dowson.*

BRAHMANABAD, a ruined city in the Hyderabad district in Sind, supposed to have been destroyed by an earthquake; and recent excavations show whole households overwhelmed together, men and women at their work, and cattle in their stalls. Sculptures, engraved gems, carved ivory, earthenware and coloured glass, have been found. Tradition says it was destroyed in the seventh century by the gods, in punishment for king Doloras' iniquities.—*Imp. Gaz.*

BRAHMANA WANSE, a race in Ceylon who take a high place amongst the Hindu races of the island.

BRAHMANDA, in Hinduism, the mundane egg created by Brahma; also the visible sky, which is supposed to be the shell of this egg.

BRAHMANI, a name of Saraswati as goddess of learning; also any Brahman woman.

BRAHMANICAL CAVES. See Architecture.

BRAHMANICIDE, the sin of killing a Brahman.

BRAHMANISM. Early writers on the religions of India, who drew their information exclusively from Sanskrit and Brahmanical sources, amongst whom was Klaproth, inclined to favour the pretensions of Brahmanism as more ancient than Buddhism; but in later times the translations of the Pali records and other sacred volumes of Buddhism in Western India, Ceylon, Burma, and Nepal, have inclined the preponderance of opinion in favour of at least a contemporaneous development. A summary of the arguments in favour of the superior antiquity of Buddhism is to be found in the notes, etc., by Colonel Sykes, in the twelfth volume of the Asiatic Journal, and in the *Essai sur l'Origine des Principaux Peuples Anciens*, par F. L. M. Maupied, chap. viii. The Rev. Mr. Gogerly says the sacred Buddhist books in Ceylon expressly demonstrate that its doctrines had been preached by the twenty-four Buddhas who had lived in succession prior to Gautama or Sakya, in periods incredibly remote, but that they had entirely disappeared at the time of Gautama's birth, so that he re-discovered the whole, and revived an extinguished or nearly extinct school of philosophy. (Notes on Buddhism by the Rev. D. J. Gogerly, appendix to Lee's translation of

Ribeyro, p. 265, quoted in Tennent's Christianity of Ceylon, p. 197.) Bunsen says (iii. 516) the worship by the Aryan immigrants and the institution of castes seems to have commenced after they crossed the Sutej river; and the original seat of this worship extended from the Indus to the Ganges and to Bengal (Behar). He adds that Brahmans, after crossing the Sutej, introduced Siva and other deities, and threw those of the Vedic period into the shade. According to Bunsen, also, it was about the year 3000 B.C. that the schism took place amongst the Aryans, when all India east of the Sutej adopted Brahmanism, and the religious views, forms, and habits of Bactria were for ever abandoned. According to Menu, the world had passed through four yugas when Brahmanism was introduced.

Fa Hian, the Chinese priest of Buddha, who travelled through Tartary to India and Ceylon in the fourth and fifth centuries A.D., mentions that in the whole of that vast route, including Afghanistan and Bokhara, he found a Buddhist people and dynasty, with traditions of its endurance for the preceding thousand years. As to Hindustan itself, he says, from the time of leaving the deserts of Jeysulmir and Bikaur and the river Jumna to the west, all the kings of the different kingdoms in India are firmly attached to the law of Buddha, and when they do honour to the ecclesiastics they take off their diadems. See also Maupied, *Essai sur l'Origine des Principaux Peuples Anciens*, chap. ix. p. 209.

According to Strabo (Dionysos, p. 117), Siva was worshipped in the mountains (Rudra, Soma, Siva); Herakles (Indra, Vishnu) in the plains. Brahmanism was found established in Hindustan by Megasthenes, ambassador of Seleucus at the court of Chandragupta, and at the time of the Periplus the very southernmost point of the Peninsula was, as now, a seat of worship of Siva's wife.

From the above it would appear that prior to the preaching of Sakya Sinha, there were in India numbers who entertained doctrines with some similarity to those which he taught; but until Asoka (B.C. 257) adopted the Buddhist beliefs, the followers of the Vedic and Puranic doctrines, as expounded by the Brahmans, were by far the most numerous. The two creeds were, however, co-existent throughout India, and in the same towns, but Brahmanism fell into the shade for about a thousand years, from the time of Buddha, B.C. 623-5, till the reappearance of Brahmans at the court of Vikramaditya, A.D. 490-530, when the religion they recognised began to assume the form which it still presents in India, a confused mass of local superstitions and myths. About B.C. 700-1 Brahmans had become a recognised caste, who shared power with the Kshatriya; the Vaisya, as merchants, had become a power; and the Sudras had become a recognised division of the population. Between the times before Sakya's advent and the centuries after Brahmans began to rise in power, the old Vedic books and their doctrines had been pushed aside by other old writings, now known as the Puranas. The Brahmanism of the Vedas and that of the Puranas are of very different characters, the change having been greatly influenced by the rise and progress of Buddhism which intervened between the two forms.

The change from Buddhism to Brahmanism was brought about often with much violence and cruelty, by great efforts of the Brahmanical sectarians. The great champions of Brahmanism were Kumārila Bhaṭṭa, who was a violent opposer of the Buddhists; Sāṅkara Acharya, the great Vedāntic reformer, who flourished in the 8th or 9th century; Ramanuja, who lived in the 12th, Madhavacharya in the 14th, and Valabhacharya in the 16th century A.D. The last three were Vaiṣṇava teachers. Ramanuja was the first to inculcate the Bhakti doctrine, and he was followed by several others, including Chaitanya in Bengal. Brahmanism is at present synonymous with Hinduism, and the Brahmanical religionists are of three classes, the worshippers of Vishnu, of Śiva, and of the Śakta or female energies of the gods. But it is in some places a nature-worship, in others an idolatry, in others a hero-worship, in others a physiology, in others a philosophy, perhaps in all a spirit-worship.

Learned Hindus, however, have six schools of philosophy, called the six Darsana, viz. Nyaya, Vaiśeṣika, Sāṅkhya, Yoga, Pūrva Mīmāṃsa and Uttara Mīmāṃsa. These have one starting-point, *ex nihilo nihil fit*; and all have the same final object, the emancipation of the soul from future birth and existence, and absorption into the supreme soul of the universe. Besides these six are a later system, known as the Puranic and the Eclectic school.—*Weber's Indian Literature*; *Elphinstone's India*; *Bunsen's Egypt*; *Tod's Rajasthan*; *Rebeyro's Ceylon*; *Tennent's Christianity*, p. 199; *Calcutta Review*; *Dowson's Classical Dictionary*; *Weber*.

BRAHMANY, a river of Orissa, rises in the Palamow table-land, lat. 23° 25', long. 84° 13'. It is formed by the South Koel and the Sankh rivers, at the prettiest spot in the Gangpur state of Chutia Nagpur, from which it passes through the Bonai, the Talcher, and Dhenkanal states and the Cuttack district into the Bay of Bengal, near Pt. Palmyras. Length, 410 miles. The confluence of the South Koel and the Sankh is said by local tradition to be the scene of the amour of the sage Parasara with the fisher-girl Matsya Gandha, who became the mother of Vyasa, the reputed compiler of the Vedas and the Mahabharata.—*Imp. Gaz.*

BRAHMANY BULL, a term applied to the humped cattle of India and the Archipelago; the *Bos Indicus* of authors, partly wild and partly domesticated; also the votive liberated bull, set free by Hindus to roam. See *Bovidæ*; *Bijar*; *Brihhotsarg*; *Saur*.

BRAHMANY DUCK, *Casarca rutila*.

BRAHMANY KITE, the name given in the Peninsula of India to the *Haliastur Indicus*. It receives its name from Europeans because Hindus reverence it, and regard it as the vahan of Vishnu. It is often fed by Hindus, on whose call of *Hari! Hari!* the birds assemble, and animal food is tossed to them. This is to be seen daily, everywhere. The birds are expert fishers. See *Garuda*; *Vahan*.

BRAHMA PURA, the fabled city or heaven of Brahma on the top of Mount Meru.—*Dowson*.

BRAHMA PURANA, the first of the Puranas. It chiefly relates to sun-worship, hence another name, *Saurya Purana*.—*Dowson*.

BRAHMAPUTRA, a river in the N.E. of India, flowing into the Bay of Bengal. It has not been traced from its source, but is generally believed to

rise among gigantic glaciers to the S.E. of lake Manasarowara. An old Lama told Abbe Desgodins that in his youth he had visited nearly the whole of Tibet, and had followed the great river from its source, in or near the lakes of Too-ma-pang, in the western part of the province of Nogaré, the most western of Tibet, and the Lama said that some days to the east of Lassa the river turns towards the south, making a long bend, and traverses the Tibetan district of Hia-yul, a rich and well-peopled district just to the north of Lhopa. The river enters the country of the wild Lhopa tribe, and winds its way among steep and rugged bare rocks, without roads, and which can be passed only by means of wretched ladders made of lianas. After a certain course among the Lhopa, the river falls over a high rock into a valley which is not known. The height of the fall is so great that the Lama said it made him giddy to look down. At this place, he said, the river is almost as considerable as the Kin-sha-kiang at Bathang.

The Imperial Gazetteer says that the Dihang is believed to be the continuation of the Sangpu or Narichu Sangpu of Tibet, which rises on the further side of the Himalayas, in about 31° N. and 83° E., and flows past Lassa eastwards through the whole of Tibet, but the continuity has not been verified, owing to the difficulties of the mountainous region and to the inhospitable character of its occupants. The main stream in the Assam valley is made up by the confluence of three swift rivers, the Dibang, Dihang, and Brahmaputra proper, in lat. 27° 70' N. and long. 95° 50' E.; the two latter are supposed to penetrate the Himalaya by a rocky gorge.

On entering the valley of Assam, the united stream rolls for 450 miles from the N.E. to the S.S.W. through the plain, with a vast expanse of water, broken by innumerable islands. On leaving Assam near Dhubri, it turns sharply due S., sweeping round the spurs of the Garo hills, and runs S. for 180 miles through the plain of Eastern Bengal as far as its confluence with the Padma, or main stream of the Ganges at Goalanda. Here the conjoint delta of the two rivers commences. The great bulk of the waters of the Brahmaputra flow toward the S.W., and ultimately reaches the sea by the broad estuary known as the Megna. Shortly after leaving Assam, what is at present (1882) the chief channel of the Brahmaputra takes the name of Jamuna, the bed along which it flowed in the middle of the 18th century running past Maimansih further to the east, and, retaining the original name, to re-unite with the larger body of water by means of the Megna. After the confluence of the Brahmaputra, Dibang, and Dihang, as it rolls to the sea it receives successively the Suhansiri, 180; Bhoroli, Manas, 189; Gadadhar or Sankas, 160; Dharla and Tista, 313, on the right bank; and the Noa Dihing, 100; Buri Dihing, 150; Di Saug, Dhansiri, and Kapili, on the left. All of these are navigable by country boats of the largest size.

The Brahmakund, a place of Hindu pilgrimage, is a very deep basin-shaped enlargement of the river, just before it emerges from the mountains to descend into the plains of Assam. The velocity of the current, which both above and below the Brahmakund is very great, suffers a great diminution at this point. In its S.W. course, along the whole length of the left shore

of the Brahmaputra, and nearly parallel to the broad valley through which it runs, we meet with a longitudinal range of secondary hills, inhabited by the various scattered tribes of the Naga, Khassya, Jaintia, and Garo, in the Patkoi, Khassya, and Garo hills. These latter hills run south-east, skirting the rice-fields of Maimansinh, Comillah, and Noa Colly, and forming the greater part of Chittagong and Arakan down to the Irawadi. The level of the Brahmaputra at Sadia is 210 feet, the fall from Sadia to the delta consequently amounting to half a foot per mile. Sadia is situated near the spot where the most considerable of its affluents join the Brahmaputra, viz. the Dihang, a river seemingly identical with the Tibetan Zambu, or Sang-pu. The ebb and flood of the tide extend, in the season when the river is low, upwards beyond Dacca. The branches of the Brahmaputra, together with those of the Ganges, intersect Lower Bengal in such a variety of directions as to form a complete system of inland navigation. The Brahmaputra begins to rise in April, owing to the melting of the snow at its alpine sources. About the 1st July it is at full flood, and all the level country is submerged; herds of buffaloes, deer, and hogs then swim for refuge to the hills. The Brahmaputra drains Assam in every direction. It is known in Assam by the name Hiranyo or golden. In the rainy season it rises 30 or 40 feet above its lowest level, overflows its banks, and inundates the country like an inland sea. In the dry season it is a labyrinth of half-filled channels, rendering the navigation intricate, and fit only for steamers of light draught. It is not navigable for steamers higher than Dibrugarh; 800 miles. As seen from Ogrhi hill, near Tezpur, the river is sweeping along in a bed of from ten to twelve miles in breadth, with numerous islands, covered with canes and shrubs. The chief towns on the banks of the river are Bishnath, Durrung, Gowhaty, Goalpara, Nasseerabad. It is navigable from the Bay of Bengal to Dibrugarh near the head of the Assam valley, within 500 miles of Pengshaw, on the Yang-tze-kiang river. Of these 500 miles, 300 are known, and if this route can be opened, the rich province of the Yang-tze-kiang may hereafter be opened to India.—*Schlagentweit's General Hypsometry of India*, ii. p. 98; *Imperial Gazetteer*. See Assam; Megna.

BRAHMA RAKSHASI. TAM. Fourcroya cantala.

BRAHMA - RANDHRA, Pineal gland. See Yug-byasa.

BRAHMARI. TEL. Clerodendron serratum.

BRAHMA-RISHI, five patriarchs of the Hindu people who founded clans or gotra of Brahmans, viz. Kaasyapa, Vasishtha, Angiras, Atri, and Brighu.

BRAHMA SAMPRADAYI, or Madhavachari, a small Vaishnava sect of Hindus in Southern India, founded by Madhavacharya, a Brahman, son of Madhige Bhatta, born A.D. 1199 in Tuluva. At Udipi, Madhyatala, Subrahmanya, and other places, he established temples, and eight mathas in Tuluva, below the Ghats. The superiors or gurus of the Madhava sect are Brahmans and Sanyasis, or profess cœnobitic observances. The disciples, who are domesticated in the several mathas, profess also perpetual celibacy, lay aside the Brahmanical cord, carry a staff and a water-pot, go bareheaded, and wear a single wrapper stained of an orange

colour with an ochrey clay. They are usually adopted into the order from their boyhood, and acknowledge no social affinities nor interests. They regard Vishnu as the supreme spirit, as the pre-existent cause of the universe, from whose substance the world was made.—*Wilson*.

BRAHMA SAVARNI, one of the 14 patriarchs who are supposed to preside successively over the 14 Manwantara of the Calpa.—*Warren, Kala Sanhita*.

BRAHMA SIDDHANTA, the second of the authentic Hindu Shastra.

BRAHMA SUTRA, or Brahma Mimansa Sutra, aphorisms on the Vedanta philosophy, by Badarayana or Vyasa.—*Dowson*. See Sutra; Veda.

BRAHMA VAIVARTA PURANA contains 18,000 stanzas; a sectarian work on the youthful Krishna and Radha.—*Dowson*. See Sacta.

BRAHMAVARTA, according to Menu, a tract of land immediately to the westward of the Jumna, between the rivers Saraswati (Sersooty) and Drishadwati (Dhrislatavi) (Caggar), about 100 miles to the N.W. of Dehli, and in extent about 65 miles long and from 20 to 40 miles broad. Its customs are models to pious Hindus. The country between that tract and the Jumna, and all to the north of the Jumna and Ganges, including North Behar, is called Bramarshi by Menu; and Brahmans born within that tract are pronounced to be suitable teachers of the several usages of men.—*Elphin*. p. 205.

BRAHMESWARA, in Cuttack, not far from Blubaneswara. Here a slab was found with an inscription in Sanskrit verse. It commemorates the temple of Brahmneswara being erected to Siva by Kolavati, the mother of Udyotaka. The era Samvat 18 is used. The temple was no doubt erected after that to Siva at Blubaneswar, which Mr. Stirling says was completed A.D. 657, and that at Kanarak A.D. 1241. If the Samvat era 18 be that of Gaur of the dynasty that subverted the Bhupala, it corresponds to A.D. 1141.—*J. A. S. B. v. p. 660, vii. p. 557*.

BRAHMO, a name applied by Mr. Hodgson to the Kusunda, a Bhot tribe occupying the dense forests of the central region of Nepal.

BRAHMO-SAMAJ'H, a small reforming Hindu sect, who regard their views as a pure theism, recognise the absolute unity and spirituality of God, the abolition of caste, and the elevation and instruction of woman. During a very few years, Brahmoism ran through three different stages. In the first it had for its foundation Vedic testimony tempered by reason; in the second stage, reason and philosophy; and about 1870 it was supposed to stand on intuition guided by reason. But quite one-fourth of the total number of Brahmo rest on Vedic testimony, and nearly one-third look up to reason alone. And though the intuitive Brahmo have done away with Srads, Anoprasans, etc., their brethren of the first stage perform those Hindu ceremonies in all their forms. The Brahmo of the second stage hold a middle place. On its decline, another theistical body arose, the Dharma Sabha. Brahmoism, in all its phases of development, has carried on a crusade against the institution and usages of caste. Its leading members have strongly advocated a repudiation of two great social customs, that of infant marriages and the prohibition of widow marriages. They have deprecated polygamy, and have striven to place

the marriage institution on a footing similar to that which has received the moral and practical sanction of civilised communities. In 1880 there were 149 Samajhs scattered throughout India. In Calcutta alone there were 20; in Bengal, 54; in Assam, 7; Chutia Nagpur, 3; Behar, 7; Orissa, 2; N.W. P., 8; Central Provinces, 1; Punjab, 5; Sind, 3; Gujerat, 3; Bombay, 6; and Madras, 6. Of these, 44 have mandirs, or places of worship. In connection with the society eighteen different periodicals were published. Of these, six were in English, nine Bengali, one each in the Hind' and Uria languages, and one in Anglo-Mahratti. There are schools kept up by the society, besides schools and classes kept up by the local Samajh.

BRAHMYA, in Hindu astronomy, the Yoga Star of the 25th lunar mansion, 'a' Pegasi.—Warren.

BRAHUI, the dominant race in Baluchistan. Their tribes, above 70 in number, are nomades, residing in one part of the country in summer, migrating to another for the winter season, and constantly shifting for pasturage. The Baluchi has a tall figure, long visage, and raised features. The Brahui have short, thick bones, with round faces and flat lineaments, are stout and squat, and numbers of them have brown hair and beards. Their name is said to be from an affix 'boan,' and 'roh,' a hill; and the name of the Narui, or Baluch, race is said to mean 'not mountaineers.' The Brahui have no religious men, whether syud, pir, mullah, or fakir. The tribes reside in tomas, or collections of tents. These tents are made of goat's hair, black or striped. The furniture is very simple, —a few metal cooking-pots, a stone hand-mill, and some rough carpets and rugs, with a distaff for spinning wool, and a hookah, are all that are usually found in a Brahui tent. That of the chief may perhaps be better furnished, and he is richer than his neighbours in flocks and herds. The dress of the lower orders is made up of a long tunic, trousers loose at the feet. The Kamburani, the chief tribe, are divided into three distinct gradations of rank, called Ahmedzai, Khani, and Kamburani. The first supplies the khan; the Khani are of the secondary rank of chiefs. The word Kamburani includes all the remainder of the tribe, but in common is applicable to the whole body. They receive wives from, but do not marry their daughters into, other tribes. The typical Brahui are certain tribes in Saharawan and Jhalawan. The Brahui are Sunni Mahomedans. They have, both in feature and speech, indications of a Turanian element. Their political chief is the Khan of Kalat.

They are entirely illiterate; not a single book exists in their language, or specimen of their language reduced to any form of writing. It is called Kur-Gali, and, according to Dr. Caldwell, is mainly Panjabi, with a Dravidian element; according to Mr. Campbell, is mainly Aryan (Indo-Persic), with a Turanian element. Ethnologists are inclined to consider them to be of the same Scythic stock as the Dravidian races in the Peninsula, and infer from this that the passage of the Dravidian tribes from Turan was along the valley of the Indus.—Mr. Campbell, pp. 54–56.

BRAJ or Braj-mandal, a pastoral district extending in a circuit of 84 cos around the town of Mathura, celebrated in the traditions of Hindustan as the country where Krishna pastured his herds.

The soil is poor and thin, with few trees, the nim, faras, and species of the fig tribe being the most prominent. The Jumna is the only great river; for the rainy season it is a mighty stream, a mile or more broad, but for eight months in the year, meanders, a mere rivulet, between wide expanses of sand. The untidy Jat and Gujar are the chief proprietary classes. Hindu pilgrims, commencing in August, perambulate its 24 groves or ripa ban and 12 ban or woods. The people are still pastoral; the villages contain much horned cattle. Braj-bhasha is a term applied to the Hindi tongue of that district.

BRAJBASI, a native of-Braj; an armed attendant, a guard, a watchman or doorkeeper.

BRALLAH. MALEAL. A small tree on the Malabar coast, used for boats, and for timbers and knees in larger vessels; it is considered strong and durable.—Edge, M. and C.

BRAMATSA. HIND. Astragalus multiceps.

BRAMBANG. MALAY. A sour fruit used for chutnis and in curries, perhaps the Averrhoa bilimbi; also said to mean the onion, Allium cepa.

BRAM-BUG. See Insects.

BRAMI. HIND. Anemone, sp.; also Taxus baccata, BENO. Sarcostemma brevistigma.—W.

BRAN or Bren. HIND. Quercus annulata. Brankul, Ulmus campestris. Branna, U. erosa.

BRAN.

Meh-fu-taze, . . . CHIN. Sakam, . . . MALAT. Bhusa, . . . GUJ., HIND. Towru, Toudu, TAM., TEL.

The thin light skin or husk of wheat, separated by means of the sieve from ground wheat.

BRANCH OF A TREE.

Ghussun, . . . ARAB. Dalia, Dali, HIND., MAHR. Thit-kain, . . . BURM. Ramo, . . . IT., SP. Shakavu, . . . CAN. Shakh, . . . PERS. Branche, . . . FR. Shakhia, . . . SANSE. Zweig, . . . GER. Kalai, . . . TAM. Dankalu, . . . GUJ. Komma, . . . TEL.

BRANDIS, DR., Conservator of Forests of Bengal, author of works on forestry. In 1881 his recommendation to form a school of forestry at Dehra was acted on by the Government of India.

BRANDY, Cognac.

Shau-tsiu, . . . CHIN. Aquarzente, . . . IT. Hwang-tsiu, . . . BURM. Vinum adustum, . . . LAT. Brandewyn, . . . DUT. Aguardiente, . . . PORT. Eau de vie, . . . FR. Wino, . . . RUS. Brantewein, . . . GER. Aguardiente, . . . SP.

A spirit largely imported into India from France and England, obtained by distilling wine. Its qualities vary with the kind of wine employed. It is manufactured in the south of Europe, from white or pale red wines and the skins of grapes. Cognac is made from the palest, eau de vie is from dark red wines; British brandy is a compound of rectified spirits. Brandy began to be distilled in France about the year 1343, but used only as a medicine, and was considered as possessing such marvellous strengthening powers that the physicians termed it eau de vie, 'the water of life.' Raymond Lully, a disciple of Arnold de Villa Nova, considered that it was intended to reanimate and prolong the life of man.—Statistics of Commerce.

BRANSH BRANTI. HIND. Myrsine Africana.

BRANTEY. —? In Penang, a light, brown-coloured, weak wood, used for building.

BRARRAH, a wood-louse in Swat which infests mosques and houses where old mats are lying about; the place bitten by them becomes red and

inflamed. The insect is of the shape of a bug, but larger.—*Lt.-Col. MacGregor.*

BRAS. HIND. *Rhododendron arboreum.*

BRAS. MALAY. Rice.

BRAS-BRAS, the Glam tree of the Malay Peninsula; furnishes a paper-like bark much used in caulking the seams of vessels. Wood used as floats for fishing nets.

BRASILETTO WOOD, *Cæsalpinia sappan.*

BRASS.

Hwang t'ung, . . . CHIN.	Orichalcum, Aurichal-	
Missing, Messing; Gil-	cum, . . . LAT.	
koper, Geelkoper, DUT.	Kuningan, Loyang, Tam-	
Cuivre jaune, Laiton, FR.	baga-kuning, . . . MALAY.	
Messing, . . . GER.	Selenoi-mjed, . . . RUS.	
Nelust, . . . HEB.	Laton, Azofar, . . . SP.	
Pital, . . . HIND.	Pittalei, . . . TAM.	
Ottone, . . . IT.	Itadi, . . . TEL.	

Brass is an alloy of copper and zinc, generally the yellow alloy, with about an equal weight of zinc and copper, called yellow brass; copper alloyed with about one-ninth its weight of tin is the metal of brass ordnance or gun-metal. Similar alloys used for the brasses or bearings of machinery are called hard brass, and when employed for statues or medals they are called bronze. Brass is extensively used in India for domestic utensils, and is in greater request than copper among the natives. Generally, Mahomedans use copper, and Hindus brass utensils. In the Panjab, for smaller work, they prepare the alloy in their own kuthali, or crucibles; for making the larger sizes, however, the gagara, shamadan, etc., they prefer the fine sheet metals imported from Europe. A metal giving a beautiful sonorous ring when struck, and called Phul or Khani, is made in the Panjab; Roin, a genuine bell-metal, is also manufactured; also an alloy called Barth, and an inferior one called Kuth. A good brass may be made by fusing two parts of copper and one of zinc; but various proportions should be used according to the purpose required. The substances used in alloying are in various proportions by native braziers to form brass, gun-metal (lokam), pewter (satki), bell-metal (kansu), and bedery ware. Occasionally silver is added to form gongs and bells. In general, however, the proportions used are regulated by reducing the quantities of the more expensive and increasing those of the cheaper metal, as far as may be practicable. Repeated meltings, by drawing off the excess of zinc, leave a good malleable brass; and for this reason old brass is much sought after by smiths when they desire it for any work requiring it to be particularly malleable. Guns taken at Kurnool were little better than spelter. Ordinary yellow brass is rendered very sensibly harder by a small addition of tin, say a fifth or half ounce to the pound; on the other hand, by the addition of a like quantity of lead, it becomes more malleable and cuts sharply. Brass becomes a little whiter for the tin and redder for the lead; the addition of nickel to brass constitutes German silver. Gun-metal (copper and tin), by the addition of a small proportion of zinc, mixes better, and the malleability is increased without materially reducing the hardness. Lead in small quantities improves the ductility of the metal, but at the expense of its hardness and colour; it is seldom added.—*Tomlinson, M. E.; Mr. Rohle.* See Bells.

BRASSAK, a subdivision of the district of

Pangkal-pinang, in the island of Banks, producing much tin. See Tin.

BRASS CAMPHIRE.

Brass-capur, GUJ., HIND. | Karpuram, . . . TAM., TEL.

This commercial term is a corruption of *Barus* camphor, also called Borneo and Malay camphor. It is the product of the *Dryobalanops camphora* of Sumatra, Borneo, and the Malayan Peninsula. It is found only in small quantities, in concrete masses, in the fissures of the wood. It is more fragrant, and less biting and pungent, than the common camphor, and is held in much higher repute. It is imported into Bombay from China.—*Faulkner.*

BRASSFOUNDER. The brassfounder or brazier trade in India is almost exclusively in Hindu hands. They form one of the five Kumalar or artisan classes, the other four being the goldsmith, blacksmith, stonecutter, and carpenter. These castes all wear the zonar or sacred string. They do not allow any Brahmanical interference with them, have their own priests and ritual, and they bury their dead in a sitting posture.

BRASSICA. *Linn.* A genus of cruciferous plants, containing several very important alimentary species.

Brassica campestris, *Linn.*, *Sarson*, HIND. This has been supposed to be the source of the Swedish turnip; it furnishes the colza oil of Europe. It is grown as a cold-weather crop in the plains of India, and as a summer crop at Ambala. It is cultivated in Afghanistan, and in Tibet up to 10,000 feet. The seed is being largely exported from Kurachee, but in N.W. India a bland oil is largely expressed from it.

Brassica eruca, *Linn.*, garden rocket.

Eruca sativa, . . . LAM. | Kala Sarson, . . . HIND.

This is largely cultivated in the arid parts of the Panjab for its bitter oil from its seeds, which is used for lamps.

Brassica erucastrum, *Linn.*, of France, Italy, Switzerland, etc., is largely cultivated in the Panjab and Oudh for its seed and oil. The cost of the (Teorah) oil is from 3 to 10 seers per rupee. It is used for burning.

Brassica juncea, *Linn.*, Rai, Turia, and Khardil, HIND., is grown largely in the Panjab, also in the Himalaya, and up to 10,000 feet in Tibet; also in Afghanistan. Its oil, somewhat acrid, is burned, and occasionally used in cooking. Its seeds are an ingredient in pickles.

Brassica napus, *Linn.*, rape, wild cabbage; colza, cole seed, or sursul of Gujerat. Much cultivated in Europe. Used as salad similar to mustard; the leaves are eaten when the plant is in seed, but it is of no great value as a vegetable. This plant is cultivated for the sake of its seeds, from which oil is extracted by grinding and pressure.

Brassica oleracea, cabbage.

Tham bau mung la, BURM. | Karam, Kopi, Gobi, HIND. Amongst Europeans, both in Europe and India, a highly-esteemed vegetable; its varieties are—

- a. *Acephala*, *D. C.*
 - ramosa*, cavalier cabbage.
 - vulgaris*, common green colewort.
 - quercifolia*, oak-leaved cabbage.
 - sabellica*, Scotch kale.
- b. *Bullata*, *D. C.*
 - major, Savoy cabbage.
 - gemmifera*, Brussels sprouts.

- c. *Capitata*, *D. C.*
 depressa, drumhead cabbage.
 spherica, great round Scotch cabbage.
 obovata, Penton cabbage.
 elliptica, early York cabbage.
 conica, sugar-loaf cabbage.
 rubra, red cabbage.
 d. *Caulo-rapa*, *D. C.*, kohlrabi.
 e. *Botrytis*, *D. C.*
 cauliflora, cauliflower, Phool-kopi.
 asparagoides, broccoli.

The cabbage plant is supposed to be indigenous in the Kashmir valley at 5000 to 5500 feet.

Brassica rapa, *Linn.*, the turnip, rape.

Luft,	ARAB.	Gonglu,	PERSS.
Shalgam,	BENG.	Gohheu,	SIND.
Mung-la-do-waing,	BURM.		

Turnips are grown in Europe, India, the Tenasserim Provinces, and in parts of the N.W. Himalaya up to 8000 feet, and in Ladakh up to 13,000.

Brassica Sinensis, *Smith*, Yun-tai, Yu-ts'ai, CHIN., is largely cultivated in the Yang-tze valley for the oil which is expressed from the seeds. It serves also for a cabbage.—*Smith*; *Von Mueller*.

BRASS LEAF, or tinsal, is manufactured by the Chinese to an enormous extent, for making the kin-hwa or 'golden flowers' used in worship. It is exported to India in boxes estimated to hold 50 catties.—*Morrison*, p. 143.

BRAT or Bart. HIND. A vow or fast.

BRATA. BENG. A religious ceremony with the Bengal Hindwani. The Siva puja, the Hari Krishna puja, the Sajooti Brata are the chief.

BRATA. HIND. Ephedra alata.

BRAUGBANG. JAV. Onion.

BRAZEN AGE. See Kalpa; Suryavansa.

BRAZIL CHERRY has spread itself all over the Neilgherry, the Pulney, and Shevaroy mountains of Southern India. It is the *Cicca disticha*, and the fruit is much prized.

BRAZILIAN BARK. See Inga.

BRAZILIAN ELEMI, also Accouchi balsam, a resin obtained from the *Feica heterophylla*.

BRAZIL WOOD, Queen's wood.

Brasilienhout,	DUT.	Pao Brazil, Pao de
Bois de brasil,	FR.	Rainha,
Brasilien-holz,	GER.	Madera del Brasil,
Legno del Brasile,	IT.	

This wood is employed by cabinetmakers in Europe, but its principal use is in dyeing red. It is, however, a commercial term for woods procured in many parts of the western hemisphere, from one or two species of *Casalpinia*, West Indian and South American trees, but, within the last fifteen years, from the Cam wood imported from Africa. The true Brazil wood is supposed to be the *Bahia nitida*, which yields a finer and more permanent colour than any other.—*Toml.*; *Faulkner*; *M.C.* See *Casalpinia*; *Dyes*.

BRE. HIND. *Quercus Ilex*, *Eremurus spectabilis*.

BRE, also Pre. TIB. 1-20th of a bushel.

BREAD.

Eish, Khaz,	ARAB.	Roti,	HIND.
Ching ping, Man-tu, CHIN.		Pano,	IT.
Mien pau, Mo-mo,		Nan,	PERSS.
Pain,	FR.	Pan,	SR.
Brod,	GER.		

Bread may be leavened, or unleavened or unfermented. In the latter, flour, water, with perhaps the addition of salt, are alone employed. In the former, the substances employed are yeast in Europe, and in Eastern and Southern Asia

the palm wines or toddies. And the substitutes for these are sesqui-carbonate of ammonia; carbonate of soda and hydrochloric acid; or carbonate of soda and tartaric acid. The breadstuffs of commerce consist of nutritious cereal grains, tuberous-rooted plants, and farina yielded by trees. Amongst them wheat, barley, oats, rice, maize, millet, Guinea corn, the sago of palms, the plantain and banana, the bread-fruit tree, the edible root crops, and starch-producing plants, the last a somewhat extensive class, the chief of which, however, are the common potato, yams, cocos or eddoes, sweet potatoes, the bitter and sweet cassava or manioc, the arrowroot and other plants.

Wheat and wheat-flour, maize, and rice form very important articles of commerce, and enter largely into cultivation in various countries for home consumption and export, a portion being consumed in the arts, as starch for stiffening linens, etc., and for other purposes not coming under the term of food. The kind of bread in common use in a country depends partly on the taste of the inhabitants, but more on the sort of grain suitable for its soil.

In India, in making bread of wheat, one process is first thoroughly to clean the wheat, and for this one woman will clean 430 lbs. in a day; then in the evening, the cleaned wheat is placed on a table and thoroughly wetted, and the water left to drain from it during the night. The next morning, the still moist grain is ground in handmills by women, a woman grinding 40 lbs. in a day. It is then sifted, and as much fine flour and soojie as can be obtained are laid aside. The remainder, then termed 'naka,' is subjected to a more powerful mill, and an inferior kind of soojie and a second sort of flour obtained from it. The residue is then ground in a large mill, and yields a coarse flour and bran.

Bran is what remains of wheat after the flour and soojie are extracted.

Soojie is the heart of the wheat, and is obtained by coarsely sifting the coarsely ground wheat with sieves and sooras, by which all the small particles of the bran are separated from it; one woman can thus clean 50 lbs. a day. It is semolina.

First sort flour is produced by finer sifting from the first grinding of the wheat.

Second sort flour is sifted from the first grinding of the wheat, after the fine is extracted, and also from the second grinding.

Bread.—The materials for bread are 60 lbs. of first soojie, 20 lbs. of second sort or naka soojie, and 20 lbs. of first sort flour. 100 lbs. of these ingredients produce 128 lbs. of bread.

Biscuit is made from second sort soojie and flour mixed in the proportion of 75 lbs. of naka soojie and 85 lbs. of second sort flour. This produces only about 85 lbs. of biscuit, which, after being well baked, is dried for two days in a kiln.

Barm or yeast sufficient for 800 loaves, 1 lb. each, is made of brown sugar, 2 lbs.; potatoes, 1½ lbs.; hops, ½ oz., with half a gallon of water. Boil and mash the potatoes; boil the hops until none appear on the surface of the water; strain and dissolve the sugar in the liquor. The potatoes are then added, and the whole is strained into a jar or small tub. The quantity produces about 3½ pints, and is generally ready for use in twelve hours. The addition of a small portion of the old barm hastens fermentation.

Wheaten bread is largely used in Northern India and by the Chinese. In Ho-nan, Shen-si, Shan-si, and Shan-tung, wheaten bread and pastry are staple articles of diet. Chinese bread is free from alum. It is raised by means of leaven, pearl-ash; and the small loaves or cakes are steamed in a very ingenious and simple way.

Cakes of wheat-flour, prepared on the girdle, are a common article of diet amongst the well-to-do races of Northern and Central India. Further south, on the table-lands of the Peninsula, the natives of India use unleavened cakes made of the flour of the Indian corn, the *zea mays*, rather less nutritious than that made from wheat, but more fattening, in consequence of the greater quantity of oil contained in it. Also, amongst the millets, bread is made of the great millet, *Sorghum vulgare*; the spiked millet, *Penicillaria spicata*; and the very poor of the people use the hard raggy, Eleusine coracana, in the form of cakes or porridge. Barley is occasionally used to the westward. Along the seaboard of all Southern Asia, and eastward into China, however, boiled rice is the great article of diet, and it is often cooked, with unfermented palm-wine, into the cakes familiarly known in India as 'hoppers,' the 'apa' of the people.

Rice flour is scarcely ever made into fermented bread, although it is said to be occasionally mixed with wheat flour for that purpose. The superiority of wheat to all other farinaceous plants, in the manufacture of bread, is very great. Its essential constituents are starch, also called farina or fecula, gluten, and a little sugar and albumen. It is occasionally adulterated with alum, which is added to whiten the flour, and to enable it to retain a larger quantity of water. Salt is also employed in the adulteration of wheaten bread, to whiten the flour and enable it to hold more water; and carbonate of magnesia is improperly used to obtain the same result.

In Eastern and Southern Asia, the well-known sago is made from the starch granules contained in the pith of several species of palms. It is largely used as an article of diet, alike for the robust labourer as for the invalid, and is extensively exported for the use of the sick and the nursery. Amongst the Arabs, burgoul is wheat boiled with leaven, and then dried in the sun. The dried wheat is preserved for a year, and boiled with butter and oil. Leavened bread is called *khazb*.—*Robinson's Travels*, ii. 132; *Tomlinson*; *Hassall*, *Simmmonds*, p. 217; *Royle*; *Bombay Times*; *Stewart*; *Smith*; *Powell*; *McCulloch*. See Cereal Grains.

BREAD-FRUIT TREE, *Artocarpus incisa*, *Willde*. When cultivated, its seeds are abortive. It is grown in Ceylon, in some parts of India, and its fruit is a staple food of the South Sea islanders. Their principal bread-fruit season is in March and April, but some kinds ripen considerably later or earlier, whilst in some districts the season itself is altogether later, and it may be said that there is ripe bread-fruit, more or less abundant, throughout the year. . . . The fruit is made into puddings, or simply boiled or baked. Quantities of it are preserved underground to make native bread. The tree is hollowed out as a canoe; its gum forms a good pitch; its bark can be made into a cloth. The skin of the fruit being pared away, the pulp is sliced and roasted, or baked in ovens.—*Dr. Secman*, *Viti*; *Montgomery*, p. 222.

BREJ or *Brege pam* is an article which is

occasionally brought to the Panjab from Siberia (Sebere, Seetha or Seth, by the natives of the N.W. Himalaya and Panjab, Scythia?). It is seen usually as a lining to postins, caps, stockings, gloves, neckties, etc. From its nature it cannot be spun into thread. It is of a white colour, with a certain gloss, and is supposed to be a species of eider down. It is fancy-priced.—*Powell*, *Handb.*

BREN. **HIND.** *Quercus annulata*, also *Breri*, *Ulnus erosa*.

BRES. **HIND.**, of Kulu; also *Karma-bres*. *Fagopyrum esculentum*, buckwheat.

BRI. **HIND.**, of Kulu. *Desmodium*, *sp.*

BRIALI. **HIND.** *Colebrookia oppositifolia*.

BRICK.

Karmid,	AR.	Bata,	MALAY.
Brique,	FR.	Ladrillo,	SP.
Ziegelstein,	GER.	Shengal, Shengkallu, TAM.	
Int,	GUJ., HIND.	Itika-rai,	TEL.
Mattone,	IT.		

A building material formed of clay, hardened either by the sun's rays or the heat of a furnace, the former being called sun-dried bricks, and the latter burnt bricks. The various argillaceous earths are for the most part unfit to be used alone for brickmaking. Some are almost pure clay or alumina, and are strong and exceedingly plastic, but cannot be dried without splitting; light and sandy clays or loams are too loose to be made into bricks without the admixture of lime as a flux to bind the materials; others, again, natural compounds of alumina and silica, if free from lime, magnesia, or metallic oxides, are exceedingly valuable clays, being, from their infusible nature, well adapted for making fireclays for lining furnaces, for making crucibles, glasshouse pots, etc. Fireclay is found in many places in India. Bricks, burnt almost to vitrification, are much employed as a road material on all alluvial lands of India. Sun-dried unburnt bricks of a very large size were formerly employed in building, and they may still be seen in the basements of some of the old ruined Jain temples at Hira Tumbal in the Ceded Districts, Anagherri in the Southern Mahratta country, and in the walls of the mud forts at Gudduk, Dummul, and other localities. The bricks appear to have been usually 2½ feet in length by 15 inches in breadth, and 7 or 8 inches in thickness. The seams are apparent from the effect of the weather, but the bricks cannot be separated without breaking. The basement and a good deal of the interior of the solid muntapums or pyramidal towers of these Jain temples were built with unburnt bricks; and the masonry and carved slabs, ornaments, and pillars were erected over this foundation of earth-work. This accounts for the dilapidated condition of parts of these temples. In some of the old forts in Southern India the lower part of the walls is made of unburnt bricks and the upper part of hewn stones. The more modern forts are chiefly constructed of mud embankments, cased in large blocks of stone, very accurately fitted, but not cemented with lime or mortar. In the ancient buildings of India, brickwork does not appear to have been extensively employed, although in some of the temples we find the upper storeys made of brick, while the lower ones are of stone. The earth-walls of the Bellary district are formed of sun-dried bricks of great size.

The material used in Babylon was unburnt

brick. Many of the ancient ruined cities of Persia are built of unburnt bricks, beaten up with straw or rush to make the ingredient adhere, and then baked in the sun. In the days of the Egyptian bondage, Pharaoh commanded the taskmasters of the people and their officers, saying, 'Ye shall no more give the people straw to make brick as heretofore; let them go and gather straw for themselves' (Exodus v. 7). 'And they had brick for stone, and slime had they for mortar' (Genesis xi. 3). Assyria abounds with asphalt, or bitumen. Herodotus and many ancient authors affirm that the walls of Babylon were cemented with it; and Arrian says, 'The temple of Belus, in the midst of the city of Babylon, was made of brick, cemented with asphaltus.'—*Mignan's Travels*, p. 166; *Dr. Hunter in M. E. J. R.*

BRICK TEA, Tung-k'au, CHINA, is tea compressed into a solid form. This article, and the khata, or 'scarf of felicity,' are great articles of trade between China and Tibet. A prodigious quantity of these goods is exported annually from the provinces of Kan-su and Sech-u'en. In Ya-tseon or Ya-tzon, the last large town of Western China, brick tea gives occupation to thousands of workmen either in its manufacture or transport to Ta-tsien-lu. This tea can only be made with a particular leaf. The tree which furnishes it grows on the banks of the river Yaho. It attains often 15 feet in height, and the leaves are large and rough to the touch. The cultivation requires little care. It is planted often on the borders of fields, or round the houses. Each grower gathers his little harvest of leaves, and finds a ready sale for them in the market of the town. The manufacture of brick tea is a monopoly secured to the dealers of this town, and for which they pay a considerable sum to the Chinese Government. For the first quality tea, the leaves are gathered in June and July, before the spring rains commence. The leaves at this period of the year are about an inch in length. As soon as detached, they are spread in the sun, and, when slightly dried or withered, they are rolled with the hand until they become humid by the exudation of the sap. They are then made into balls about the size of a large teacup, and left to ferment. When they are in fermentation, they are placed between wooden moulds or lever presses secured by pegs or bolts. These moulds are then placed over a wood fire. The tea is taken out in a compact mass, and forms the brick tea of commerce. They are then delivered to the merchants of the town, by whom they are wrapped in yellow paper, on which is impressed the stamp of the Government and the mark of the dealer who exports it. They are then packed in baskets of plaited bamboo, about four feet long. One of these baskets, weighing about twenty pounds, is the unit of trade. The baskets are carried on men's backs to Ta-tsien-lu, a distance of two hundred miles. There they are carefully wrapped in fresh hides, to prevent the tea from imbibing moisture. They are then fit to be sent to Lassa, or even beyond. A basket costs about twelve taels, that is, at the rate of 4s. 8d. the English pound. A second kind is made with older and yellow leaves. The mode of preparing is the same. It is sent chiefly to Lithang and Butang. At the latter place it sells for about five taels the basket, or at the rate of 1s. 6d. the

pound. A third quality is made with the waste and *débris* of the leaves. The bricks of this quality resemble those sometimes made with the young shoots of the tea tree cut up. The manufacture differs from the two other sorts, inasmuch as it is necessary to add rice water to combine the substance and to make it retain the form of the mould. This quality is only sold at Ta-tsien-lu and its neighbourhood, and fetches 9d. per pound. The quantity of brick tea exported annually from Ya-tseon to Tibet is roughly estimated at six million pounds. The high price of tea in the markets of Tibet arises from the monopoly of the Chinese, which is increased by that of the Lamas, who keep in their hands the retail sale. And as tea is an article of prime necessity in Tibet, the Celestial Empire keeps in dependence the Lamas, and by them the people of Tibet. Brick tea is cooked in a varied manner. Mr. Atkinson (*Orient. West. Siberia*, p. 477) was given it mixed with milk, butter, salt, and flour, presenting the appearance of thick soup. The form of bricks was doubtless given to it for the convenience of carriage.—*Mr. Cooper in Statesman; Huc, Chinese Empire.*

BRIDELIA LANCAEFOLIA. Roxb. A tree of considerable size, native of Bengal.

BRIDELIA MONTANA. Gibson.

Goonjun Mara, . . . CAN. | Asanna, . . . MAHR.

Found in Canara, common in Dandee, where it reaches a great size. Hardly inferior to teak, and stands water equally well. It seems well worthy a trial for naval purposes. In Cuttack, sells at 6 annas per cubic foot. It is a light brown-coloured wood, and strong. Plentiful in the Santal jungles from Ranibahal to Hasdiha, used for beams, planks, and building purposes generally. The tasar silkworm feeds chiefly upon this tree.—*Cut. Engineer's Journal*, July 1860; *Dr. Gibson.*

BRIDELIA MOONII. Thw.

Cluytia retusa, Moon's Cat. | Pat-kaa-la-gass, . . . SING.

Common in Ceylon up to an elevation of 2000 feet. The Singhalese consider this quite distinct from *B. retusa*, which it, however, very closely resembles, differing in its somewhat larger leaves, axillary not spiked, inflorescence, and ovoid fruit. They are probably mere varieties of one species. The timber of both is useful for building purposes.—*Thw. Zeyl.* p. 279.

BRIDELIA RETUSA. Linn., Spreng.

B. spinosa, Roxb. | *Cluytia retusa*, Linn.

B. crenulata, Roxb.

Kosi, . . . GUMSUR. | Duriamaddi, . . . TEL.

Kat takaa la-gas, . . . SING. | Koraman, Koramaddi, „

Adamaruthu, . . . TAM.

This is a large and very valuable timber tree. It is common in most jungles and dry forests throughout Ceylon and the Madras Presidency, in Ganjam, Gumsur, Bengal, in the lower spurs of the Himalayas. The wood is of a dirty red or copper colour, very stiff, strong, close-grained, and durable, but not easily worked. Its extreme height is 30 feet, circumference 3 feet. A cubic foot unseasoned weighs 68 to 70 lbs., and 60 lbs. when seasoned, and its specific gravity is .960; it is used for house-building, construction of carts, agricultural implements, railway sleepers, rafters, spinning-wheels, and a variety of other purposes, and it stands the action of water; the bark is a strong astringent. Cattle eat the leaves greedily, and they are supposed to act as a vermifuge.

In Gumsur it is also burnt for firewood, the tree being very common. The leaf is used medicinally for itch. The bark of this tree is said to be poisonous, and a preparation of it is often used for the purpose of destroying life, particularly by Oriya widows, among whom suicide is a frequent occurrence.—*Captain Macdonald; Beddome, Fl. Sylv.* part xxii. p. 260.

BRIDELIA SPINOSA. *Willde, Roxb.*

Cluytia spinosa, Roxb. C. Pl.

Assanna, Asun, . . . MAHR.	Mulla vengay, . . . TAM.
Mulla vangay, . . . MALEAL.	Kora manu, Duria
Katu Keta Keela, SINGH.	madde? . . . TEL.

This large tree is a native of several parts of Southern India; in the alpine jungles of Coimbatore it attains a considerable size, in the Godavery forests, where its wood is esteemed as very strong and good. It is rather a common tree in the Bombay forests, both coast and inland. The wood is strong and tough, and stands the action of water well; hence it is often used for the frames of wells, whereon the superstructure of masonry is erected. It is also used as beams for houses. This wood deserves, in Dr. Gibson's opinion, to be more extensively known than it is; cattle eat the leaves voraciously. They are said to destroy worms in their bowels. The undooroo wood of the Northern Circars is a species of *Bridelia*.—*Drs. Roxb., O'Sh., Gibson, Wight, and Cleghorn; Captain Beddome, Flor. Andh.*

BRIDGE.

Pont, FR.	Bashi, JAP.
Brucke, Steg, . . . GER.	Pul, Pool, . . . HIND., PERS.
Ponti, IT.	Puente, SP.

Bridges in the S.E. of Asia are built of stone, brick, wood, iron, rope, bamboos, canes, and twigs. Hindu and Mahomedan rulers in India built but few bridges. The Bhot, Mongol, and Tartar races of the Himalaya and Burma have numbers of them. In Burma, bridges are seldom wanting near villages where nullahs or inundated fields obstruct the communication; near towns they are sometimes of extraordinary length. The construction there never varies. Large teak posts are driven in pairs or triplets, with bays between, not exceeding twelve or thirteen feet. Mortice holes are cut through those parts in which cross bearers are laid, with beams and solid planking over those, and a railing is added.

The most characteristic of Hindu bridges are composed of stone posts, several of which form a pier, and are connected by stone beams. Others are on thick piers of masonry, with narrow Gothic arches.

Turner tells us of a simple bridge for the accommodation of single passengers, constructed between two opposite mountains, which consisted of two large ropes made of twisted creepers, stretched parallel to each other, and encircled with a hoop (*Embassy*, p. 54). This is the original of the *jhula* or rope bridges of the Himalaya. In the early part of the 19th century, Mr. C. Shakespear advocated rope bridges in India, and one of 160 feet span was erected over a stream at Benares. The bridges of Kamaon are of four kinds,—a simple spar thrown across from bank to bank; the *sanga*, by successive layers of timber, those above gradually projecting to form an arch; the *jhula* of ropes stretched from bank to bank, with a suspended ladder; and (4) a single cable across a stream along which a basket traverses.

In Jummoo the *chiha* or haul bridge is in use; a smooth rope of several strands is hung across from bank to bank, on which traverses a wooden ring, from which is suspended a loop. In this the traveller seats himself, and another traversing rope pulls the ring and traveller across. Down the curve the passage is quick, but the pulling up is tedious. The ordinary bridge is of three ropes, made of birch or other twigs, and hung, one for the foot to traverse, the other two a yard above it for the traveller to steady himself.

The *jhula* consists usually of three ropes stretched across the stream, at a height of 8 or 10 feet, between two buttress piers. The three ropes are suspended like the letter V, two parallel ropes forming the upper plane and a central one the lower plane. This disposition is secured by large V-shaped prongs of wood, which at intervals of four or five yards are secured in position above and below by thongs of raw hide, and further strengthened above by a cording, which is passed across between the two upper points where they are fixed to those ropes. It is crossed by the traveller walking on the lower of the ropes, which is sometimes of double or triple strands, and holding his balance with the hands on the upper ropes, which run at each side on a level with his shoulders.

The *Kadthal* bridge of Kashmir is made of wood, and is very strong and durable. It consists of undressed logs of pine and cedar timber, the undressed trunks of the trees supported on piers 20 to 25 feet apart. The piers rest on a foundation of stones embedded in the muddy bottom of the river, and protected by a cutwater pointing up the stream, and built of loose stones filled into a frame of logs of wood. Those above Serahan, opposite Mira, and at Poari, whether swinging or suspension bridges, are unsuited for the passage of sheep and mules. The elevation of the rope bridge (*jhula*) at Tuni on the Touse river is nearly 3000 feet above the sea.

The *Nara*, over the Nyn Sukh, near its junction with the Jhelum, consists of a single cord stretched across from bank to bank, and secured on either side to some projecting rock or firmly set tree. The cord is furnished with a loop-cradle, which is slung on to it by a forked piece of wood. This last forms the upper part of the cradle, which, when once adjusted, is irremovable from the cord, though it slides freely backwards and forwards on it by shaking the cord. The cord is made of a climbing plant, with the straight twigs of a species of *indigofera*.

In the N.W. Himalaya the timbers used for ordinary wooden bridges are *Alnus*, *spr.*, *Bombax heptaphyllum*, *Cedrela toona*, *C. serrata*, *Phoenix dactylifera*, *P. sylvestris*, and *Salix alba*. For swing bridges, *Andropogon involuta*, *Betula bhojputra*, *Cotoneaster obtusa*, *Indigofera heterantha*, *Olea Europæa*, *Parrotia Jacquemontiana*, and *Salix alba*.

A writer in the Bengal Asiatic Society's *Journal* (vol. xiii. p. 614) mentions that he had seen half a dozen bridges, within as many miles of Cherra, made by intertwining the growing india-rubber tree. The rope bridges of the Panjab Himalaya, made of the twigs of the *Parrotia Jacquemontiana*, *Decaisne*, have often a span of 300 feet. Lt. Wilcox, in 1825-28, described a bridge or *saku* near the Dihang river, consisting of two strong canes stretched between stages

of bamboo, which are secured in piles of the largest portable stones heaped up around them; the points of suspension were 80 yards distant. A cradle or long basket, in which a passenger may sit or lie, is hung on the canes by two loops, and two or three men pulled it across when loaded.

The three rivers of Western Yunnan are the Lan, Lu, and Lung. The suspension bridges, which are the pride of Yunnan, are all constructed on the same principle,—five or more chains, formed of oval links about 6 inches in the long diameter and $\frac{3}{4}$ inch thickness, are strained very tightly across, the ends being imbedded in rock or masonry. The way consists of planks laid on these, not suspended from them; and two other chains, hung from massive gatehouses at both ends, form a protection and assistance to the passenger. In some cases the road chains are tied with bars. The bridges vibrate considerably, but the curve is not great.

It is mentioned in the Bengal Asiatic Society's Journal (xiii. 613), that on the top of a huge boulder by the river-side was growing a large india-rubber tree, clasping the stone in its multitude of roots. Two or three of the long fibres, whilst still easily pliable, had been stretched across the stream, and their free ends fastened on the other bank. There they had struck firmly into the earth, and now formed a living bridge of great and yearly increasing strength. Two great roots run directly one over the other, and the secondary shoots from the upper have been bound round and grown into the lower, so that the former affords at once a hand-rail and suspending chain, the latter a footway. Other roots have been laced and twisted into a sort of ladder as an ascent from the bank to the bridge. The greatest thickness of the upper root is a foot, from which it tapers to six or eight inches. The length of the bridge is above eighty feet, and its height about twenty above the water in the dry season. One bridge measured ninety feet in clear span. They were generally composed of the roots of two opposite trees (apparently planted for the purpose) bound together in the middle.

On the Wa-lingtia, or larger branch of the river, were several other remarkable bridges. One on the suspension principle, across a precipitous gorge on the road between Cherra and Tringhai, was about 200 feet long. It was composed of long rattans stretched between two trees, at a height of forty feet above the river in the dry season. The footway was a bundle of small canes lashed together, and connected with two large rattans forming hand-rails, but these so low and so far apart, that it must be difficult to grasp both together. The hill Kasias are afraid to trust themselves on it, but the War, or men of the valleys, cross it drunk or sober, light or laden, with indifference and security. Still further up the river, and near the little village of Nongpriang, immediately under Cherra, is another specimen of Kasia engineering and ingenuity,—a bridge of about 80 feet span, composed entirely of strong bamboos, bent into a semicircular arch, affording a sound footing and firm rails for the hand.

The bridge has been metaphorically in use with many nations to indicate the means of passage of the soul of the dead. The Zoroastrians were devout believers in the immortality of the soul

and a conscious future existence. They taught that immediately after death, the souls of men, both good and bad, proceeded together along an appointed path to the bridge of the gatherer, Chinvat-neretu (Haug). This was a narrow road conducting to heaven or paradise, over which the souls of the pious alone could pass, while the wicked fell from it into the gulf below, the place of punishment, in the kingdom of Angromanyus. The good soul was assisted across the bridge by the angel, 'the happy, well-formed, swift, tall, Serosh;' and as he entered, the archangel Vohumano rose from his throne, greeting him with, 'How happy art thou who hast come here to us from the mortality to immortality.' Then the pious soul went joyfully on to paradise.

The modern Parsee has still the bridge Chinvat neretu that leads to heaven; and on life departing, a dog is brought to gaze on the dead (Sag-did), that its passage over Chinvat may be secured. And the Mahomedan has the Pul-i-Sirat, across which the good walk easily, but it is as sharp as a razor for the wicked, whom it cuts in two. There is a bridge for the dead in Java, and in N. and S. America. In Polynesia, a canoe is the object typified, as with the Greeks and Romans, with whom a boat was the supposed means of transport. The river Baitarani of Orissa is the Styx of the Hindus.—*Drew, The Northern Barrier; Turner; Drs. Cleghorn, Stewart, and Mason; Jour. of Asia, Soc.* xiii. p. 614; *G. Rawl.* ii. p. 339.

BRIGGS, a general officer of the Madras army, author of *Letters on India*; Translation of Ferishta, Lond. 1829, 4 vols.; *A Short Account of the Sheilly Family*, Lond. As. Trans., vol. vi. 77; *Description of a Persian Painting*, ibid. vol. v. 314; *On the Land-tax of India*. Editor of the Persian Tarikh-i-Ferishta. He was Assistant Resident at Poona under Mr. Elphinstone as Resident, and was there when the last Baji Rao moved out of Poona and burned down the Residency, and with it his manuscript of the translation of Ferishta. When peace was restored, he retranslated and printed it.—*Dr. Buist's Catalogue*.

BRIGGS, H. G., author of *Cities of Gujarashtra*, Bombay 1849; *On the Parsees*, Bombay 1852.—*Dr. Buist's Catalogue*.

BRIGU, in Hindu mythology, is a Vedic sage. Many traditions are related of him; his name is frequently found in the Hindu writings.—*Cole. Myth.*

BRIHADRATHA, of the line of Pandu, father of Jarasandha, one of the Barhadraha dynasty of Indian kings. According to Bunsen, he ruled B.C. 866 to B.C. 847.—*Bunsen*, iii. p. 547.

BRIHASPATI, also Brahmanaspati, a deity of the ancient Hindus, to whom several positions are assigned.—*Dowson*. See Hindu; Vrihaspati.

BRIHAT-CHAKRAMED. HIND. *Sesbania aculeata*.

BRIHATCHITRA. HIND. *Cassia sophora*.

BRIHATEE. BENG. *Solanum ferox*.

BRIHAT SANHITA, an astronomical work by Varaha Mihira.—*Dowson*.

BRIJ BHASHA, the Hindi tongue proper. See Braj.

BRIKHOTSARG, Brishotsarga, or Vrishotsarga, is the marriage ceremony performed in the name of the bull which the Hindus of N. India liberate on the eleventh day of mourning for a near relative. In the Northern Dekhan, in Oudh

and the N.W. Provinces, these are known as *saur* (taurus) *bijar*, and the British call them *Brahmany bull*. They are a nuisance in the streets. See *Banotsarg*; *Jalotsarg*.

BRIKU. BENG. *Agati grandiflora*.

BRIMDU, *Brimla*. HIND. *Celtis Caucasia*.

BRIMO or *Dung*. TIBETAN. The yak cow.

BRIM POSH. HIND. *Nymphaea alba*.

BRIN. KASH. *Arctomys bobac*.

BRINDA. SANSK. *Ocinum sanctum*.

BRINDABAN is an ancient town in *Muttra* (Mathura), on the right bank of the *Jumna*, in lat. 27° 23' 20" N., and long. 77° 44' 10" E., and 6 miles north of *Muttra*; population, 21,004. It is the centre of the *Vrinda Vana* of ancient India, the pastoral and forest land near *Mathura*, where *Krishna* and the *Gopin* shepherdesses sported. *Hindus* of Northern India regard it as one of their holy cities, and it contains a large number of ghats, wells, tanks, temples, shrines, and sacred sites. The temple of *Govind Deva* was erected 1590, by *raja Man Singh* of *Ambar*; that of *Madan Mohan* is at the upper end of the town, *Gopi-nath*, built by *Ruesil Jai* about 1580, and the great temple of the *Sikhs*, 1845-51, dedicated to *Rangji*, which cost 25 lakhs. The *Brahmakund* and *Govindkund* tanks possess great sanctity for *Hindus*, to whom, since the middle of the 16th century, they have been places of pilgrimage. *Hindus* also make many other pilgrimages—to *Pooshkur* in *Rajputana*, to *Dwarka* in *Gujerat*, to *Jaganath* at *Puri*, to *Badrinath* in the *Himalaya*, to *Benares* on the *Ganges*, to *Ramisseram* near *Ceylon*, to *Punderpur* on the *Bhima*, to *Tripati* near *Madras*, *Hinglaz* on the coast of *Makran*, etc. Their religious mendicants even travel to *Baku*, the site of a sacred fire on the *Caspian*.—*Cal. Rev.* See *Temples*.

BRINJ. PERS. Properly *Birinj*, husked rice.

BRINJAL, Egg-plant.

<i>Bengan</i> , HIND.	<i>Bodingan</i> , SUMATRAN.
<i>Tarung, Trung</i> , MALAY.	<i>Kattarikai</i> , TAM.
<i>Vartaka</i> , SANSK.	<i>Vankua</i> , TEL.
<i>Dirgavartaka</i> , "	

For culinary purposes, the vegetable egg, or *brinjal*, *Solanum melongena*, is one of the best vegetables in India. Several varieties are extensively cultivated and eaten by all classes. One variety is a large round-shaped fruit, both purple and white; another is white, thin, and long; a smaller species, again, is pear-shaped, red and purple striped; and there is one seldom exceeding the size of an egg. They are all dressed alike, and used both in curries and other native dishes, and are much on the tables of Europeans. Their propagation is by seed, at the commencement of the rains. The young plants are placed at about 18 inches apart, and require watering every third or fourth day.

BRINJARA. See *Banjara*.

BRINKOL. HIND. *Berchemia*, *sp.*

BRINRAJ BUNGRA. HIND. *Eclipta erecta*.

BRISARI. HIND. *Edwardsia mollis*.

BRISHABDEO, properly *Vrishabdeva*, has the same meaning as *Nandeswar* of the *Saiva* sect, the bull being the effigy of both. In order to distinguish the particular pontiff to whom any Jain shrine is consecrated, it is only requisite to look on the pedestal for the symbol, as the bull, the serpent, the lion, etc., each having his peculiar emblem.—*Tod's Travels*, p. 97.

BRISTLES.

<i>Borstels</i> , DUT.	<i>Ruma</i> , MALAY.
<i>Soies</i> , FR.	<i>Szezeciny</i> , POL.
<i>Borsten</i> , GER.	<i>Schtschetina</i> , RUB.
<i>Setole</i> , IT.	<i>Cerdus, Setas</i> , SP.

The strong hair from the back of the hog and wild boar, used by brushmakers, shoemakers, saddlers, etc. Russia is the great mart for such bristles. Those of the elephant's tail, hedgehog, and bandycoot rat, are also utilized.—*Faulkner*; *McCulloch, Dict.*

BRISYA, called *Vishu* in the *Karnatic*. In *Hindu astronomy*, the 15th year of the cycle of *Jupiter*.—*Warren*.

BRITAIN. The United Kingdom of Great Britain and Ireland is a dominion in the extreme west of Europe, which now sways the destinies of British India, and has many colonies. It is ruled over by a sovereign, with responsible ministers, and two Houses of Parliament, viz. the House of Commons and the House of Lords. And for the government of India, there is, in London, a minister with a council of twelve, composed of men acquainted with India; it also sends to British India for administration, a Viceroy and Governor-General, with a Governor for Bombay and one for Madras; appoints councillors and finance ministers, with judges for the High Courts of Calcutta, Madras, and Bombay, and for the North-West Provinces. For the command of the three British-Indian armies, Great Britain sends three Commanders-in-chief, with several generals of divisions. The United Kingdom of Great Britain has many colonies and dependencies, and its entire dominions are usually designated the *British Empire*, over which it rules by means of viceroys, governors-general with councils, governors with councils, parliaments, and commissioners. The area and population are as under:—

	Sq. Miles.	Population.
Brit. N. America, Gt.		
Britain, and Brit. India,	5,438,000	188,514,000
British Feudatory India,	596,700	47,909,109
Colonies of Great Britain,	4,562,000	161,486,000

In *Europe*, it includes *Heligoland*, with five square miles of territory; *Gibraltar*, with less than two; and *Malta* with 115,—the last two being military stations, with garrisons amounting to some 14,000 men. The population of *Heligoland* in 1871 was 1813; of *Gibraltar*, 26,216; and of *Malta*, 29,084.

In *America*, in the Dominion of Canada, a population but slightly exceeding that of Scotland inhabits a country ten times the extent of Scotland, and is increasing steadily, but not rapidly, at something like an average rate of 14 per cent. in the decade. Of the several provinces of which the Dominion is made up, *Ontario* (which contains the purest Anglo-Saxon population) had in 1871, 1,620,851 inhabitants, *Quebec* had 1,191,516, and *New Brunswick* had 285,594. *Nova Scotia* had 387,800. *Prince Edward Island*, which joined the confederation in 1873, had 94,021; and *Newfoundland* numbers 146,000 inhabitants. Besides these are *Manitoba* (formerly known as the *Red River Settlement*), *British Columbia*, and the sparsely-peopled territory formerly ruled by the *Hudson's Bay Company*.

With the *Bermudas*, but excluding the unenumerated provinces of the North-West, the total population of this section of British dominions

is set down at 3,789,670, inhabiting an area of 3,376,925 square miles.

The *West India Islands*, with an area of 13,109 square miles, have a population of a little more than one million, and there is abundant room for the development of the human race in their splendid climate and genial soil. Jamaica, which had 377,000 inhabitants in 1844, and 441,000 in 1861, reached in 1871 the aggregate of 506,154; and in the last ten years there has been no devastating epidemic. In Barbadoes, the black and mixed population is growing in numbers, while the whites are dwindling.

Passing from the islands of the Mexican Gulf to the continent, there is British Honduras or Belize, a dependency of Jamaica, with a population of 24,710, of whom only 377 are whites. British Guiana reckons 193,491 inhabitants, excluding the 'aborigines,' but including 48,976 'coolies,' immigrants from Asia. The Falkland Islands, with 803 inhabitants, close the list of British American possessions.

In the *African Continent* and the adjacent islands, Britain claims 236,860 square miles of territory, peopled by 1,813,450 inhabitants, of which the island of Ascension has 27, and that of St. Helena 6241. On the mainland, Sierra Leone had 38,936 inhabitants in 1871. The Gambia Settlements, 14,190 inhabitants; the Gold Coast about 400,000. The island of Lagos, which was ceded in 1861, has 62,021 inhabitants, of whom 94 are whites. In South Africa, the colonized or partially colonized settlements—the Cape, Griqualand, and Natal—comprise an area of 229,582 square miles, and have an estimated population of 961,505 inhabitants.

In the *Indian Seas*, the Mauritius, with its dependent islets, has its area of 708 miles, closely packed with a thriving population of 330,460 inhabitants, the Indian immigration numbering here on the census day 153,703. West Australia has not yet been, in the proper sense of the word, colonized, and has only 24,785 inhabitants to its 978,000 square miles of domain. South Australia, with an area of 760,000 square miles, has 185,626 whites and 3369 aboriginal inhabitants. Victoria, with an area of 81,000 square miles, has 731,528 inhabitants (including 17,935 Chinese and 1300 aborigines). New South Wales has on its 323,437 square miles, 503,931 inhabitants, the population in 1821 having been no more than 29,000. Queensland has 120,104 inhabitants. Tasmania's present population of 99,328 is only 10 per cent. greater than that registered in 1861. Norfolk Island contains a total population of 401 souls. New Zealand white population numbered, in 1871, 256,393, while the aborigines (all, except a couple of thousands, established in the North Island) were estimated at 37,500. In 1851 the immigrant inhabitants were only 26,000 in number.

The island of Ceylon showed a population of 2,405,287; Singapore had 97,000 inhabitants; Penang, 67,000; Province Wellesley, 71,000; and Malacca, 77,000. The island of Hong-Kong and the peninsula of Kow-loon have an aggregate population of 120,000.

India is divided into twelve provinces, two ruled by governors, three by lieutenant-governors, and seven by chief commissioners, the Viceroy being supreme over all; it is distributed for administrative purposes into 53 divisions, 231 revenue and

judicial districts, and 1114 executive subdivisions. The village is the 'recognised territorial unit,' and averages in area something like the fourth part of an English parish. The population of the British Empire in India under direct British control, in 1881, was 209,217,694; and within its borders, under sovereigns in alliance or as feudatories, the people numbered 43,323,596, being a total of 252,541,210. In British India and its feudatory states, about 190,000,000 profess some form of the Hindu or aboriginal religions, about 45,000,000 are Mahomedans, and 3,000,000 Buddhists and Jains. The empire possesses 7,769,449 square miles of territory. The United Kingdom, 121,608 square miles; the colonies, 6,685,021; India and Ceylon, 962,820. There are 38 persons to a square mile in the empire; 260 in the United Kingdom, 201 in India, and 141 in the colonies. It should be observed, however, that in some parts of India the density of population more than equals that of Britain. The Empress Queen Victoria, the British sovereign, rules over 234,762,593 souls; her people dwell in 44,142,651 houses.—*Times*.

BRITASTAN, mentioned in the Brahmanda Purana as the place of religious duty, is supposed by some to be the island of Great Britain. It is also called Switadwip, or the White Island, and Suvarnadwip, or the Golden Island; is conjectured also to be Ireland. The British islands are (it is said by some) sometimes called Chunradwip, and likewise Tricalasa, or the island with three peaks, viz. Rajatakuta, Ayacuta, and Suvarnacuta. The British isles are supposed to be the sacred western isles of the Hindus.—*Warren, Kala Sanhita*.

BRITISH GUM, Mien kau, CHIN., is made by heating common wheat flour up to 400° Fahr. It is very useful in the treatment of starch bandages.—*Smith*.

BRITISH INDIA is a name which is applied to a great collection of different races, with different religions and different forms of government. Its people, in manners and habits, are as diverse as their climates, or as the plains and the mountains, fruitful valleys and savage jungles, that they occupy. The British are only recent arrivals. In 1625-26 the East India Company established a factory at Arnagam, on the Coromandel coast. In 1629 a mercantile agency was formed at Surat; in 1634 the emperor of Delhi granted permission to trade in Bengal. In 1645, Gabriel Broughton, a ship's surgeon, obtained for the East India Company the additional privilege of planting factories in Bengal. In 1881 the British territories and those of the allied and feudatory chiefs had a population of 252,541,210, as under:—

Brit. Ter.	209,217,614	viz.:	Nat. States,	43,323,596	viz.:
Bengal.	68,829,920		Mysore.	4,186,399	
Madras.	30,839,181		Baroda.	2,154,469	
Bombay.	13,978,488		Travancore.	2,401,158	
„ Nat. States,	6,941,631		Cochin.	600,278	
„ Sind.	2,404,934		Puduchottah.	281,809	
Assam.	4,815,157		Banaganapilly.	26,388	
N.W. Provinces.	32,699,436		Sundoor.	14,999	
Oudh.	11,407,625		Rampur.	345,152	
Panjab, British.	18,786,107		Native Garhwal.	200,523	
Central Prov.,	11,505,149		Panjab Nat. St.	3,853,282	
Burma, British.	3,707,646		Khaibar Troops.	8,153	
Coorg.	178,283		Rajputana.	11,005,512	
Ajmir.	453,076		Central India.	9,200,881	
Berar.	2,670,982		Hyderabad.	9,167,789	

The island of Ceylon and the Straits Settlements, though in the East Indies, are British colonies, and are not included in British India.

The British had been trafficking in the East Indies for some time prior to the grant, by Queen Elizabeth, of a charter to a company of merchants, who, under various re-grants, up to 1833 continued to trade with India, while they were also waging wars with, and acquiring dominions from, its previous rulers. Amongst the earliest of their possessions was the island of Bombay, which Charles II. received as a dower with his Portuguese bride. The British power did not, however, rise to its present magnitude over the ruins of ancient kingdoms, or by dispossessing dynasties that had long held sway. But the fortunes of war set aside a few families whose dominant position was almost ephemeral, and whom the British succeeded in the rule over the various populations. And, brief as has been the British dominion, at no period within historic times have so many portions of British India been so long under one paramount rule. The population of all India by the 1881 returns is 252,541,210. Its foreign trade—imports and exports—is £124,840,000, consisting in round numbers of imports, £50,000,000; exports, £74,000,000. Yet, as a recent writer has well remarked, there never has been anything like a British conquest of India. No plan of such conquest was ever formed in Britain. No armament ever left the British shores for such purpose, nor did the British exchequer ever furnish subsidy or supply with that object; and further, no British viking, no one like the Norman chiefs of the middle ages, ever left Great Britain to found a nation or to acquire a principality in the East Indies, but a trading company and their officials gradually became transformed into the most powerful oligarchy that the world has ever seen. The first occasion of the natives of Britain coming in contact with a force of natives of India, was in 1664, when Sivaji attacked and plundered Surat, on which occasion Sir George Oxenden won the applause of Aurangzeb by an uncommon display of valour. With the formation of factories and the hiring of troops to defend them, was laid the foundation of a central power, which has gradually grown in strength sufficient to control and shelter the various races, and extend its sway from Cape Comorin to the Indus.

Madras was constituted a Presidency in 1639, Bombay in 1662, and Bengal in 1682. In 1773, the Governor of Bengal was made Governor-General of India, with certain powers, chiefly political and financial, over the other two. In 1784, a Board of Control was created in Britain, composed of the king of Great Britain's ministers, who in that capacity bore the title of Commissioners for the Affairs of India; and this system of superintendence continued until the year 1858, when British India was taken under the direct control of the Crown. During that interval the home administrators of India had consisted of a board of 18 members, called the Directors of the East India Company, and the President of the Board of Control. These directors had mostly all the patronage as to appointments, except to the higher offices and commands which were made in communication with the British ministry, who likewise originated all questions of peace and war, possessed the power of reversing the acts of the East India Company and those of the Government of India, and also of sending out instructions on

special matters to the Governor-General, without consulting the Directors.

Sir George Birdwood has furnished the following list of the acquisitions of territory:—

- 1757, 20th Dec., the Twenty-four Parganas, from the Nawab of Bengal.
 1759, 14th May, Masulipatam, from the Nizam.
 1760, 27th Sept., Bardwan, Midnapur, and Chittagong, from the Nawab of Bengal.
 1765, 12th Augt., Bengal, Behar, and Orissa, from the Emperor of Delhi.
 1765, 30th Augt., Chingleput, from the Nawab of Arcot.
 1766, 12th Nov., the Northern Circars, from the Nizam.
 1775, 21st May, the zamindari of Benares, from the Vizir of Oudh.
 1776, 22d May, Salsette island, from the Mahrattas.
 1778, 17th June, Nagore, from the Raja of Tanjore.
 1778, 18th Sept., the Guntur Circar, from the Nizam.
 1786, Penang island, from the King of Quetta.
 1792, 17th March, Malabar, Dindigul, Salem, Bara Mahal, from Tipu Sultan.
 1795-96, Ceylon, from Holland; in 1801, made a colony.
 1799, 13th July, Coimbatore, Canara, Wynad, Neilgherry hills, from Tipu Sultan.
 1799, 25th Oct., Tanjore, from Raja of Tanjore.
 1800, 12th Oct., the Ceded Districts, from the Nizam.
 1801, 31st July, the Carnatic, from the Nawab of Arcot.
 1801, 10th Nov., Gorakhpur, Lower Doab, Bareilly, from the Vizir of Oudh.
 1802, 31st Dec., Districts in Bundelkhand, from the Peshwa.
 1803, 17th Dec., Cuttack and Balasore, from the Raja of Berar.
 1803, 30th Dec., Upper Doab, Delhi territory, etc., from Sindia.
 1805, 21st April, districts in Gujarat, from the Gackwar.
 1815, 2d Dec., Kamaon and part of Terai, from Nepal.
 1817, 13th June, Saugur, Huttah, Dharwar, etc., from the Peshwa.
 1817, 6th Nov., Ahmadabad farm, from the Gackwar.
 1818, 6th Jan., Kandesh, etc., from Holkar; Ajmir, from Sindia; Poona, parts of the Konkans, and Southern Mahratta country, from the Peshwa; districts of the Nerbadda, Sumbulpore, Patna, etc., from the Raja of Berar.
 1820, 17th Dec., Southern Konkans, from the Raja of Sawuntwaree.
 1822, 12th Dec., Bijapur and Ahmadnaggur, from the Nizam.
 1824, 2d Aug., Singapore, from the Raja of Johore.
 1825, 9th Aug., Chinsura and Malacca, from Holland, in exchange for Bencoolen.
 1826, 24th Feb., Assam, Arakan, Tavoy, Tenasserim, from the King of Burma.
 1832, Cachar, lapsed.
 1834, Coorg, from the Raja of Coorg.
 1839, Aden, captured.
 1841, Bhutan Dwar, from the Raja of Bhutan.
 1843, Sind.
 1845, The Jullundur Doab; Serampur and Tranquebar.
 1849, The Panjab and Satara.
 1849, Jeitpur, Bundelkhand.
 1850, Sumbulpur, S.W. Frontier.
 1850, Bughat, (Us Suttje).
 1852, Part of Sikkim.
 1852, Oodeypur, S.W. Frontier.
 1852, Part of lands of Mir Ali Murad.
 1852, Pegu.
 1853, Part of N. Cachar.
 1853-54, Nagpur and Jhansi.
 1856, Oudh and Tanjore.
 1865, Boodawal in Kandesh.

The statistical abstract, also, shows, as follows, the increments in the area and population since 1839-40:—

Year.	Sq. Mls.	Pop. Millions.	Year.	Sq. Mls.	Pop. Millions.
1839-41	618,000	147.99	1850-51	773,000	167.41
1841-43	628,000	149.44	1851-52	779,000	167.93
1843-46	670,000	151.18	1852-53	806,000	169.85
1846-47	688,000	155.83	1853-54	830,000	172.58
1847-48	694,000	156.94	1854-55	834,000	172.82
1848-49	768,000	166.73	1855-56	858,000	184.04
1849-50	769,000	166.84	1866-62	860,000	184.13

Boundaries.—British India is enclosed on its north, its west, and its east by mountain ranges, amongst which are to be found the highest summits in the world. The seaboard on the south extends from Cape Monze, in lat. $24^{\circ} 50' N.$, and long. $66^{\circ} 43' E.$, to the Pakchan river in the Mergui district of Tenasserim.

The inland boundary, on the west, extends from the Arabian Sea to the Himalaya, running northward from Cape Monze along the Hala, the Suliman, and the Safed Koh mountains, up to the Kābul river; thence it skirts the lower slopes of the Himalaya along the plain of Peshawur up to the river Indus, and, crossing this great river, the boundary penetrates the Himalaya up to the north-western extremity of the British district of Hazara, in lat. $35^{\circ} 2' N.$, and long. $74^{\circ} 9' E.$, separating Kashmir from a group of independent tribes, up to the Chinese province of Ili or Yarkand. The passes through the enclosing mountains are not numerous, and are all difficult, particularly those on the north and on the west. On the north-west are the Khaibar, 3373 feet, and the Kuram, leading into Afghanistan; and on the west are the Gwalari near Dera Ismail Khan, the Tal near Dera Ghazi Khan, and the Bolan, which at top is 5800 feet. The districts on the British side of this western frontier are occupied by many tribes, under the administrative control of the Commissioner of Sind and the Lieutenant-Governor of the Panjab; the foreign side being occupied by similar Baluch, Brahui, and Pathan tribes under democratic constitutions.

On the north, British India is bounded throughout by the Himalayas, the native principality of Kashmir occupying their north-western angle; among their more southern ranges lie the independent states of Nepal and Bhutan and Sikkim; and up to long. $97^{\circ} 5' E.$, the mountain face of Assam is occupied by many uncivilised, even barbarous, tribes.

Turning south from Assam in $97^{\circ} 5' E.$, the eastern boundary runs continuous with other tribes, and with native Burma as far as the Karen highlands and the Salwin river, where it joins the frontier of the kingdom of Siam, and runs south with it to the Pakchan river, in lat. $10^{\circ} 48' 14'' N.$, and long. $98^{\circ} 55' 40'' E.$

Several mountain ranges and several rivers traverse the region within these bounds. The Vindhya north of the Narbada, with the Satpura hills south of that river, separate Hindustan from the Dekhan, and from prehistoric times their forests and valleys have given shelter to aboriginal tribes whom intruding races had driven from the plains. The Vindhyas run eastwards from Gujerat across Malwa and the central parts of India, rising from 1500 to 4500 feet high, and the Rajmahal Hills jut into the valley of the Ganges in long. $80^{\circ} 45' E.$

The Satpura stretch from east to west for 600 miles. Amarkantak is their eastern boundary. Their plateaux are elevated between 3000 and 4000 feet above the sea.

From the north-east angle of the Himalaya spurs and chains project southwards. They are known successively as the Abar, Naga, Patkoi, and Barel ranges, culminating, in lat. $22^{\circ} N.$, in the Blue Mountain, 7100 feet high, and then stretch south under the name of the Arakan Yoma, which also are sheltering many uncivilised tribes. The

Arakan Yoma range, starting from the Blue Mountain, in $22^{\circ} 37' N.$, strikes southwards from the mountains of S.E. Assam, separating Arakan from Independent Burma in the north, and from British Pegu in the south, and terminating at Cape Negrais. The Pegu Yoma, starting from Independent Burma, separates the valleys of Sitang and Salwin, and terminates near the head of the Irawadi delta. Further southwards, the mountains on the Tenasserim coast mark the boundary line to the Pakchan river, already noticed.

Within these outer barriers are less prominent ranges running north and south, and detached hilly tracts and spurs tenanted by tribes in various stages of civilisation, but mostly of a low type, several of them utterly barbarous, addicted to human sacrifice, and one at least, the Birhor, still cannibals.

On the east of Assam and Bengal, the low ranges and the valleys of Hill Tipperah are occupied by the Tipperah, the Nowattia, and the Riang populations, numbering 75,792 in an area of 3876 square miles.

The Garo hills, in the S.W. corner of Assam, between lat. $25^{\circ} 9'$ and $26^{\circ} 1' N.$, and long. $89^{\circ} 52'$ and $91^{\circ} 3' E.$, are occupied by a race with polyandric customs. The Khassia and Jaintia hills have an area of 6157 square miles; they lie between lat. $25^{\circ} 1'$ and $26^{\circ} 14' N.$, and long. $90^{\circ} 47'$ and $92^{\circ} 52' E.$ They form the central section of the watershed between the valleys of the Brahmaputra and the Surma. The Garo and the Syn-teng of the Jaintia have both fought with the British for independence; the Syn-teng so recently as 1862-3.

In Rajputana, the Aravalli hills, from 6 to 60 miles broad, and rising 1000 to 2855 feet above the sea, run for 300 miles in a N.E. and S.W. direction between the Rajput states and Ajmir-Mhairwara, dividing the plain of Marwar from the high table-land of Mewar, and merging into the Vindhya near Abu. It is sparsely occupied by the Mhair and other Mongoloid races. Mhairs of the Ajmir-Mhairwara hill tract are still a small body of 69,234 souls, in an area of 602 square miles. They are brave mountaineers, but were wild and highly predatory, until Lieutenant-Colonel Dixon transformed them into disciplined soldiers.

In Southern India are the Eastern Ghats, commencing in Orissa, and skirting the east coast southwards to Tinnevely, affording shelter to many large tribes,—Gond, Juang, Kandh, Saura, Chensuar, and Yenadi.

The Western Ghats run from the valley of the Tapti southwards for 800 miles, and terminate in Cape Comorin, presenting several high peaks about Mahabaleshwar above 4000 feet, and in the Neilgherries up to 8000 feet elevation. In their most northerly parts they give shelter to the Bhil and the Koli, and in their southern forest and hill tracts to the Kadar, Pulliar, Malai Arasar, and Maleali, with Irular, Toda, Badaga, and Kurubar.

The great alluvial low-level tract of Northern India, watered by the Ganges and Indus and their tributaries, is known as the Indo-Gangetic plain. It is an immense expanse of flat country stretching from sea to sea, entirely composed of alluvial deposits of very late geological age, and separating the hilly ground of the Peninsula from the various mountain and hill ranges of Sind, the Panjab, the Himalaya, Assam, Burma. The geological formations of the peninsular area are arranged in the

Manual of Geology as recent and post-tertiary, cænozoic, mesozoic, palæozoic, and azoic, the last comprising the Vindhyan series, the transition, and the metamorphic or gneissic. The formations in extra-peninsular territories being recent and post-tertiary, pliocene, miocene, cocene, cretaceous, jurassic, trias, permian, carboniferous, and silurian and infra-silurian, all the infra-silurian being non-fossiliferous.

Rivers.—The navigable rivers of India are the Ganges, the Indus, the Brahmaputra, the Irawadi. The *Ganges* rises in the Garhwal State, in lat. $30^{\circ} 56' N.$, and $79^{\circ} 6' 40'' E.$, and enters the Bay of Bengal by many mouths, after a course of 1557 miles. Under the name of Bhagirathi, it issues from an ice-cave at the foot of a Himalayan snow-bed, 13,800 feet above the sea. Twelve rivers of British India are deemed holy by the Hindus, and the pushkaram festival is held at them. But the *Ganges* is the most sacred. To live on its banks, or near it, is a happiness; and to die on its banks, or in its waters, a great privilege. It is used for navigation and for irrigation. Its catchment basin is 391,100 square miles, and maximum flood-discharge 1,800,000 cubic feet per second.

The *Jumna*, *Jauna*, or *Yamuna*, joins the Ganges at Allahabad, after a course of 680 miles. Its source is in Garhwal, in the Himalaya, 5 miles N. of Jumnotri, 10,819 feet above the sea; and its catchment basin is 118,000 square miles. On its banks are the cities of Hamirpur, Agra, and Delhi; the eastern and western Jumna canals have been led from it at Faizabad and above Agra, but in the hot weather it dwindles to a small stream. The Jumna at Agra, and at other places, since many years had been bridged by a line of boats, and now splendid railway bridges span it at Delhi, Agra, and Allahabad.

The *Brahmaputra* river course is 1800 miles; and it is navigable for steamers up to Dibrugarh, 800 miles from the sea. Its drainage basin is 361,200 square miles. Its valley is the province of Assam, and many tribes occupy both its banks. At Goalanda, about half-way between the delta head and the sea, the Ganges unites with the main stream of the Brahmaputra, and farther down with the Megna. Their combined waters represent the drainage collected by the two vast river systems from an aggregate catchment basin of 752,000 square miles on both sides of the Himalaya, together with the rainfall poured into the Megna from the Burmese watershed.

The *Indus* river was known to the Greeks as the Sindhu or *Σινδο*. It rises in lat. $32^{\circ} N.$, and long. $81^{\circ} E.$, on the north-western slope of the Kailas mountain, the Sutlej river rising on its southern slope, and the Brahmaputra, under its Tibetan name of Tsang-pu, at some distance from its eastern base, in lat. $31^{\circ} N.$, and long. $83^{\circ} E.$, and 16,000 feet above the sea, the Dihang river being supposed the connecting link between the Tsang-pu of Tibet and the Brahmaputra of Assam. The Indus pours its waters into the Arabian Sea after a course of 1800 miles, its drainage basin being 372,700 square miles.

The *Ravi* in the Panjab is the Hydrates of Arrian, the Sanskrit Airavati. This stream has been utilized to supply the Bari Doab canal. In March and April its depth on the borders of the district of Amritsar is not more than a foot.

Between June and September it rises to 18 or 20 feet. The main bed alters but little, and the greatest volume of water only floods a mere fringe on either bank. In 1870 it carried away a Sikh shrine near Dera Nanuk, and it still threatens damage.

The *Irawadi* river (Airavati), after a course of 900 miles, disembogues by several mouths into the Gulf of Martaban. It rises, by two branches, from the Patkoi mountains, one of them in lat. $27^{\circ} 43' N.$, and long. $97^{\circ} 25' E.$, the other a little to the east, the Myit-gyee and Myit-gne, which unite about lat. $26^{\circ} N.$, and run to the south along a catchment basin of 158,000 square miles. It is navigable above 500 miles north to Bhamo; and at Mogoung, when at its lowest, the bottom was not sounded at 40 fathoms.

The *Koladyn* or *Kuladan*, a river of Arakan, is supposed to have its origin near the Blue Mountain ($22^{\circ} 37' N.$), and it passes the town of Akyab to enter the Bay of Bengal. It is navigable for 50 miles for vessels of 300 or 400 tons.

The chief rivers of the Peninsula of India, are the Mahanadi, Godavery, Kistna, and Cauvery, and, though not navigable, are valuable for irrigation.

The *Mahanadi* rises in the Raipur district, in lat. $20^{\circ} 10' N.$, and long. $82^{\circ} 3' E.$, and, after a tortuous course of 520 miles through the Central Provinces and Orissa, falls into the Bay of Bengal. Its catchment basin is estimated at 43,800 square miles; its flow is rapid, and its flood-discharge 1,800,000 cubic feet per second. An elaborate system of canals has been constructed to husband its water, and designed to irrigate 1,600,000 acres.

The *Godavery* river, rising near Trimbak, in lat. $19^{\circ} 55' N.$, and long. $73^{\circ} 34' E.$, 50 miles from the sea, runs through the Hyderabad dominions into the Northern Circars, where it forms a delta of 3000 square miles, and enters the Bay of Bengal by seven mouths (three of which are large), after a course of 898 miles. Its drainage basin, 112,200 square miles. A great dam has been constructed across it at Dowlaish-waram, the head of its delta.

The *Kistna* river is south of the Godavery. It also has been largely utilized for irrigation, by throwing a dam across it at Bezwarra. It rises near Mahabaleshwar, in lat. $18^{\circ} 1' N.$, and long. $73^{\circ} 41' E.$. Its catchment basin is 95,500 square miles, and its maximum flood discharge is 1,188,000 cubic feet per second.

Still further south is the *Cauvery*, the *Καβηρος* of Ptolemy, with a river basin of 27,700 square miles. It flows across the southern parts of the Peninsula. It rises in the Western Ghats, in lat. $12^{\circ} 25' N.$, and long. $75^{\circ} 34' E.$; and its length is 465 miles. It is one of the twelve holy rivers of the Hindus, who call it the Dakshina Ganga. Crowds of Hindu pilgrims annually visit its banks. Its waters are utilized for irrigation in Mysore and in Coimbatore; and at Srirangam, near Trichinopoly, a prehistoric Hindu king constructed a dam, and led off its waters into the Cauvery proper and Colerun; 835,000 acres in the districts of Trichinopoly, Tanjore, and S. Arcot are now irrigated by it, yielding a revenue of £353,000. In the benefits it bestows on those districts, it vies in usefulness with the canals of the Godavery, the Ganges, and the Indus.

In the river system of British India there is a

peculiarity which merits notice. Shortly after issuing from the mountains among which they rise, the rivers run through low-lying valleys to the sea. Their fall is so gentle, that, following their windings for even 1000 miles from the ocean, they are still found in beds only seven or eight hundred feet above the level of the sea. Where the united streams of the Panjab join the Indus, the altitude is only 369 feet at a distance of 450 miles from the sea; the confluence of the Ganges and Jumna at Allahabad, 846 miles from the sea, is 340 feet. This peculiarity is the more worthy of notice, because, throughout these territories, there are no natural inland lakes or seas which can be used for commerce, most of them being only fit for purposes of irrigation. The largest natural waters in the country are equalled, and in many cases surpassed, by the magnificent tanks which have been formed in several places by throwing embankments across great valleys. The many shallow marine lagoons, known as backwaters, found running close around the shores of the Bay of Bengal and of the Indian Ocean, some of them from 20 to 50 miles long, are, however, well meriting notice, and greater attention than has hitherto been given to them, as they afford facilities for a safe inland traffic along the coast line, the violence of the monsoons and the few sheltered harbours on the eastern coast of the Peninsula rendering navigation at times perilous, and periodically impossible. After the East India Railway was opened, steamers ceased to ply upon the Ganges, but they still run on the Brahmaputra and its tributary the Barak, also on the Irawadi, and on the Indus.

Ancient India.—Dr. Vincent was inclined to believe that in the very earliest ages, even prior to Moses, the communication with India was open; that the intercourse with that continent was in the hands of the Arabians; that Thebes had owed its splendour to that commerce; that Memphis, from the same cause, came to the same pre-eminence, and Cairo succeeded to both in wealth, grandeur, and magnificence. Passing by the mythological Bacchus, also Semiramis, queen of the Assyrians, who is said to have crossed the Indus about B.C. 1960, and to have been defeated by Satabrates, as also Sesostris, king of Egypt, who is said to have led an army to the Ganges B.C. 1808, we come to the first mention in the Bible, of India, by that name, in the book of Esther about B.C. 450.

Of the *ancient dynasties* who ruled in India, Colonel Tod, in his *Rajasthan* (i. p. 44), endeavoured to bring together what was known of the Solar and Lunar races. The wrecks of almost all the vast cities founded by them are yet to be traced in ruins,—the cities of Ichhwaca and Rama on the Sarjoo, Indraprestha, Mathoora, Soorpoora, Poorag on the Yamuna, Hastinapura, Canyacubja, Rajgraha on the Ganges, Maheswar on the Nerbada, Arore on the Indus, and Koosuthulli Dwarica on the shore of the Arabian Sea.

Menu calls India *Aryavarta*, the abode of the Aryans. *Bharata* or *Bharata-varsha* is the classical Sanskrit name; and in Sanskrit poetry it is mentioned as *Jambu-dwipa*. The name as known to Europeans is derived from the river *Sindhu*, pronounced by the Aryans Hindu, and known to Europe as the Indus. The Greeks named the people *Indoi*. The seven rivers, *Sapta Sindhavah*, in old Persian or Zand were called *Hapta*

Hindu; and to the present day, all along the western frontier of British India, *s* and *h* continue interchangeable.

The first Greek who speaks of India by name is Hecateus of Miletus, B.C. 509–486. Herodotus, who wrote about B.C. 450, appears to have heard but indistinctly of any but the western part of it, and that only by its being tributary to Persia. He informs us (book iv.) that Darius Hystaspes had despatched Scylax of Caryandra to explore the Indus, about B.C. 508, and that he departed from Caspatyrus and Pactya, which were situated near the head of the Indus. Herodotus continues to say that the Indians who inhabit towards the north, and border on these territories of Caspatyrus and Pactya, resemble the Bactrians (that is, their neighbours) in manners, and are the most valiant people of all India. The eastern part of India, says he, is rendered desert by sands; which description applies only to the country lying east of the Indus and south of the Panjab, and this was the eastern limit of Herodotus' knowledge. Following him, Ctesias, the physician, B.C. 401, brought back from his residence in Persia only a few facts about the products of India.

Prior to Alexander the Great, B.C. 327, there are doubts as to anything historical in the Indian accounts, for the Sanskrit-speaking Indians had no historical pursuits; and east of the Indus was earliest made known by the learned men who accompanied Alexander, and particularly by the writings of Megasthenes, who, B.C. 306–298, was the Greek ambassador at the court of the Hindu prince of Pataliputra-pura. Other of the Greek writings have been lost, but Strabo, Pliny, and Arrian have given them in a condensed form.

Most of the writers about Alexander call the inhabitants of the hilly region to the south of the main ridge of Caucasus and near the Indus, Indians, and also mention an Indian tribe or nation who inhabited the seashore on the western side of the Indus; and close to the Indus, especially on the lower part of its course, there were other Indian tribes, though less considerable than those two. The Indians on the seashore were named *Orizæ* and *Arabizæ*, and are recognised by Major Rennell (*Memoir*, p. 21) as the people called Asiatic Ethiopians by Herodotus. Their country was the narrow tract between the mountains of Baluchistan and the sea, separated from Makran on the west by the range of hills which form Mount Arboo, and on which still stands the famous Hindu temple of Hinglez. The Indians whom Herodotus includes within the satrapies of Darius, are probably the more northern ones under Caucasus, for he mentions (*Thalia*, pp. 101, 102) that those in the south were independent of the Persian monarchy. Arrian (*Indica*, pp. 8, 9) denies the alleged invasions of Bacchus, Hercules, Semiramis, Sesostris, and Cyrus; and Strabo (*lib. xv.* near the beginning) denies the mythological invasions, adding that the Persians hired mercenaries from India, but never invaded it (see Diodorus, *lib. ii.*). The other Greek writers, though they speak of Indians beyond the Indus, strictly limit India to the eastern side of that river; and Arrian, though he called the mountaineers Indians, from the place where Alexander entered Paropamisus, is careful to explain that India lies east of the Indus; and Strabo (*lib. xv.*) declares the Indus to be the western boundary of India from the mountains to

the sea. Pliny, indeed, states that some consider the four satrapies of Gedrosia, Arachosia, Aria, and Paropamisus to belong to India, but this would include two-thirds of Persia. The ancient Sanskrit writers also regard the Indus as the western boundary of India, and class the nations beyond it as Yavana and barbarians; and there is a tradition that Hindus ought not to cross that river, the town of Attock taking its name from this prohibition. Later on, the countries between Hindustan and China came to be called the Further India, or India extra-Gangem; whereas Hind, or India, was restricted to the country of the people called Hindus or those of India intra-Gangem.

Conquerors from the North-West.—From the earliest historic times, Persian, Greek, Scythic, Arab, Turk, Moghul, and Afghan conquerors from the N.W. have been coveting the wealth and the fertile plains of the Gangetic valley, and dynasties professing Buddhism, Hinduism, and Mahomedanism have been striving for possession within.

Scythic races appeared in India in the early centuries of the Christian era. They came from the inhospitable mountain and desert lands in the north and north-west; and after them Turk, Moghul, Arab, and Afghan have continued to the present day to seek dominion in the more genial climate of India, and to engage in its commerce. Darius Hystaspes, B.C. 518, had conquered to the N.W. part of it. The Greeks appeared under Alexander B.C. 327–325, and under Seleucus B.C. 312, and Menander B.C. 181–161. During his two years' campaign in the Panjab and Sind, Alexander captured no province, but he made alliances, founded cities, and planted Greek garrisons. At Taxila (Deri-Shahan) and Nikaia (Mong) in the Northern Panjab, at Alexandria (Uchh) in the Southern Panjab, at Patala (Hyderabad) in Sind, and at other points along his route, he established military settlements of Greeks or allies. A body of his troops remained in Bactria; and in the partition of the empire after Alexander's death in 323 B.C., Bactria eventually fell to Seleucus Nicator, the founder of the Syrian monarchy.

During the next six hundred years the Greeks were followed by Scythic tribes of the Su, the Saka, the Hun, the Naga, and the Getæ, who made continuous, several of them successful, efforts to remain. About B.C. 126, the Tartar tribe of Su are said to have driven out the Greek rulers from Bactria. The Græco-Bactrian settlements in the Panjab were overthrown by the Tue-Chi; and during the rule of Kanishka, who held the fourth Buddhist council about A.D. 40, Scythic settlements were formed as far south as the districts now known as the Central Provinces. Scythian races more than once overthrew prior rulers, and more than once sustained great defeats; but some of the Rajput dynasties, and also the Jat, the ancient Getæ, now about 9,000,000 in the Panjab, retained a permanent hold on the country east of the Indus and southwards to the mouth of that river, and Jat princes are still ruling in Bhartpur and Dholpur.

The Sah of Saurashtra (B.C. 70 or 60), the Gupta of Kanauj (A.D. 319–470), and the Valabhi of Cutch (A.D. 480–722), seem to have opposed successive hordes of Scythians. But Mr. Fergusson believes that it was the White Huns who overthrew the Gupta dynasty between A.D. 450 and 475, and that the Saka and the Hun were finally defeated at the great battles of Karur, near Multan

and Maushari, which that learned writer supposes to have been fought between A.D. 526 and 544.

During these struggles for dominion, Vikramaditya, a king of Oojain, about B.C. 57, drove back one Scythic invasion, and his victory gave rise to the Samvat era still current in India. Salivahana, another king of Southern India, is supposed to have successfully checked another Scythic invasion, A.D. 78, from which event the Saka era is reckoned; but the repulse was not permanent, for Cosmos Indicopleustes, who traded in the Red Sea about A.D. 535, speaks of the Hun as a powerful nation in Northern India in his day.

Tradition names Nushirwan, king of Persia A.D. 521–579, as having invaded Western India and left descendants there; but from that time till near the 19th century, it was Arab, Turk, Moghul, and Afghan races who were the invaders, till Portuguese, British, Dutch, Danish, and French appeared on the scene.

The Khalif Usman (A.D. 636) sent an expedition to Thana and Broach. A few years later (A.D. 662 and 664), raids were made towards Sind, which the youthful Kasim (A.D. 712–714) conquered, again to be lost and again regained (A.D. 828), only to be finally lost again.

The Valabhi dynasty of Cutch, Malwa, and the N.W. districts of the Bombay Presidency (A.D. 480–722), seem to have been overthrown by the Arab invaders of Sind in the 8th century; and since then the Mahomedan dynasties who have ruled in India have come from Central Asia, and their families have reigned for various periods from 20 to 331 years.

The Jat settled in the country as cultivators of the soil, and they continue to the present day engaged in husbandry, but with the Mahomedan dynasties, the Turk Mahmud, the Moghul Timur, the Persian Nadir, and the Afghan Ahmad seem to have been attracted by the hopes of plunder. Mahmud of Ghazni twelve times (A.D. 1001–1026) made inroads on the south-western parts of the country, carrying back with him immense wealth; Timur (A.D. 1398–99) sacked Delhi and Meerut, and left fifteen years of anarchy, famine, and pestilence behind him. Nadir Shah (A.D. 1738–39) took away with him from Delhi eight or nine millions in gold and silver money; Ahmad Shah, in his invasions, obtained the Panjab (1751–52) and sacked Delhi (1756); and his invasion of 1759 led to the assassination of Alamgir II., but after he overthrew the Mahrattas at Paniput (1761) he left India never to return to it.

The duration of such of the invading dynasties as obtained a hold of the country, was as under:—

House of Ghazni (Turki),	A.D. 1001–1186	Years 185
„ Ghor (Afghan),	„ 1186–1206	„ 20
Slave Kings (chiefly Turki),	„ 1206–1290	„ 84
House of Khilji (Turki),	„ 1290–1320	„ 30
„ Taghalak (Panjab Turks),	„ 1320–1414	„ 94
Timur (Moghul),	„ 1398–1399	„ —
Syuds,	„ 1414–1450	„ 36
Lodi (Afghans),	„ 1450–1526	„ 76
House of Baber (Moghul),	„ 1526–1857	„ 331

Whilst these races were striving for the possession of the Indo-Gangetic plain, several dynasties of prior occupants in the south of India were overwhelmed by Mahomedan armies, and families professing Islam formed kingdoms in Gujerat, Kulbarga, Beder, Golconda, Bijapur, Ahmadnagar, Malwa, Kandeah, Bengal, Berar, Sind Hyderabad, Mysore, and Arcot.

In the 14th century (1347), Hasan Gangu, surnamed Bahmani, headed a successful rebellion in the Dekhan against Mahomed Taghalaq, and drove the armies of Dehli across the Narbada. Hasan was an Afghan of humble origin, but had attained distinction in the Peninsula, and, on declaring for independence of the empire, he fixed his capital at Kulburga. His descendants reigned 179 years (1347-1526), through thirteen generations. Their territory, when at the height of their power, comprised the central parts of the Dekhan from sea to sea, and from Berar in the north, southwards to Conjeveram; and when at length the dynasty became effete, several smaller houses assumed sovereignty:—

Adal Shahi of Bijapur,	1489-1579
Nizam Shahi of Ahmadnagar,	1490-1595
Kutub Shahi of Golconda,	1512-1580
Imad Shahi of Berar,	1484-1560
Barid Shahi of Beder,	1498-1572

Almost contemporaneously (1336-1565) a Hindu race had been dominant at Vijayanagar. But it fell to a combination of four of these Mahomedan dynasties, who were victorious at Talikata. The aged monarch, Rama Raja, was taken prisoner, and put to death at Kala-Chabutra in cold blood. The Vijayanagar monarchy at that time comprehended almost all the south of India, but mutual jealousies prevented the victors from extending their respective frontiers, and they, too, in succession shortly disappeared.

During the 14th and 16th centuries, Bengal, Kandesh, Malwa, and Gujerat saw many changing Mahomedan monarchies; but in the 17th century (1662) a great Hindu power was formed in the Peninsula by Sivaji, a Mahratta, a brave and skilful leader, between whom and the Mahomedans no faith was held, and, on his death, a Brahman tribe, with the title of Peshwa, continued to direct the energy which Sivaji had evoked. The emperor of Dehli, Aurangzeb (Alangir I.), during a long life strove to hold the Central Dekhan, but from his death, A.D. 1707, the Moghul dominion there was practically at an end, and for the next fifty years the empire even of all India wavered between the Mahrattas of Poona and the Moghuls of Dehli. The Peshwas, however, never recovered from the destruction of their army at Paniput (1761); and the British under Clive, and Hastings, and Coote, and Laurance, and Hector Munro, obtained a prominence which they still maintain; the Mahratta territories of the Peshwas became partitioned into many separate states, often at war,—Kolhapur, Satara, Gujerat, Gwalior, Indore, Tanjore, and Berar, with many Hindu chiefships along the valleys of the Kistna and its affluents. During the convulsions, Mahomedans of Arab, Afghan, Pathan, and Turk descent seized on Cuddapah, Hyderabad, Kurnool, Banaganapilly, the Carnatic, and Mysore; chief officers of the Mahrattas retained the jaghir lands which had been assigned for their own salaries and that of their followers; and rajas of Sundur, Mudhol, Akalkot, and sirdars of the Dekhan, still hold these estates.

The power of the Walajah family of Arcot in the Carnatic, closed after a few troubled years. Hyder Ali and his son Tipu, after a brief sway in the Mysore, which they had won, were followed by a Hindu monarch. Numerous Hindu polygar chiefs apportioned among themselves the lands of the Pathans of Cuddapah; Satara, Berar, and Tanjore

disappeared as Mahratta dynasties; and in 1839 the Pathan ruler of Kurnool, dreaming of conquests, was overthrown in battle at Zorapore.

In the north-west, since many thousand years, the Panjab has been a battle-field of the races contending for empire; and within historic times, Greek and Scythian, Hindu and Buddhist, Turk and Moghul, Arab, Persian, Afghan, and British have been there. At the close of the 18th century, Ranjit Singh, an able ruler of the Sikh faith, established his sway over all the parts of it west of the Sutlej, and he conquered also Kashmir. But anarchy followed his death (1839); and the latest contest for dominion was by the East India Company, who fought for safety at Moodkee, Ferozshah, Aliwal, and Sobraon in 1845, and at Gujerat in 1849, on which maharaja Dhulip Singh transferred his sovereignty to the British. A few years later on (1856), the king of Oudh, hereditary wazir of the Moghul empire, was set aside for utter misrule. The following year the titular Moghul dynasty of Dehli threw in their lot with mutineers, and were swept away. And the Mahomedan states of Hyderabad, Bhopal, and Banaganapilly, with the Hindu kingdoms at Bhartpur, Dholpur, Baroda, Cochin, Mysore, Jodhpur, Jeypore, Oodeypur, and Travancore in Hindustan, in Rajputana and in the Dekhan, remain the oldest dynasties among the princes of India,—the most ancient, perhaps, in the world, being the Rajput houses of Oodeypur and Jodhpur.

Within historic times, except for brief intervals and in very small principalities, the ancient people of India have never had rulers of their own races. Periodical literature not infrequently alludes to British domination as a foreign rule. But the imperial dynasties ruling from Dehli had merely a military occupation; the cultivators of the Rajput states, and of the Gaekwar, of Holkar, and of Sindia, are largely of the Kurmi, Kunbi, Kach'hi, and Mali races, and of the aboriginal Gond, Koli, Meeua, Mhair, Bhil, and others. Hyderabad, in the Dekhan, is a very compact Mahomedan state, with eleven millions of population, but its people are almost all Teling, Canarese, Mahratta, and Gond, in nearly equal numbers. The population of Mysore is of a most varied character; and the Hindu kingdom of Travancore, another compact state, has rulers of the Nair race, and the bulk of their subjects professing some form of Hinduism, has only 440,932 Nair in a population of 2,311,379.

Cities.—With such continuous revolutions, the people have never had time to collect into large town populations. Tradition tells of Ajodhya as a great city, covering an area of ninety-six miles, but there are now, perhaps, more large towns than India has ever before known, and even yet only 139 of them have more than 20,000 inhabitants. The former unsettled state of the country, and the craving of the people for protection in their peaceful labours, are well illustrated by the histories of the strictly British towns of Calcutta, Madras, and Bombay. At these three cities, fortresses were erected by the British, and the people have gathered around them. The great capital of British India, which now contains a population of 794,645 souls, was, at the close of the 17th century, a cluster of three small mud hamlets. The only previous notice of 'Kalikata' is a brief entry of it as a rent-paying village in the emperor

Akbar's great statistical survey of 1596. But in 1686 the English merchants at Hoogly, being compelled to quit their factory in consequence of a rupture with the Moghul authorities, retreated, under their president, Job Charnock, to Sutanati, a village on the east bank of the river, now a northern quarter of Calcutta. In 1696 they built the original Fort William, and a few years later purchased the three villages of Sutanati, Kalikata, and Govindpur from Prince Azim, son of the emperor Aurangzeb. But with the security given by its fortress and its bordering river, the population is now approaching a million of souls.

Madras, as it is called by the British, is still only known to the people as a collection of several hamlets, Chinapatan, Mutialpet, Vepery, Nangambakam, and others. In March 1639, Francis Day, chief of the commercial settlement at Arniagon, obtained from the representative of the Vijayanagar dynasty a grant of the site on which Madras now stands, and a factory with some slight fortifications was at once constructed. It may be doubted if there were a thousand people in all the hamlets. But the natives settled around the factory, a better fort was built, and at the census of 1881 the population numbered 406,117.

Bombay Island formed part of the dower of Catharine, queen of Charles II. of England, who in 1688 transferred it to the East India Company for an annual payment of £10. The population was estimated at 10,000 souls. The Company strengthened the fortifications; in 1673 the inhabitants numbered 60,000; piracy was put down; its island position further protected it, and in 1881 its population had increased to 773,196.

Similar increments are going on in and around all the sites taken up by the British as cantonments and military stations. Secunderabad, for instance, had no existence until the British Subsidiary force, during the reign of Secunder Jah (1803), encamped on its present site; but its inhabitants in 1868 numbered 32,000 in 7938 houses.

In the war with Burma of 1852-53, Rangoon, on a branch of the Irawadi, was taken by the British, and its population was estimated at 25,000; in 1872 it had 89,897 (99,745) inhabitants, but in 1881 its population reached 131,176 souls.

The great towns, Calcutta, Bombay, Madras, Rangoon, continue to attract immigrants from all parts of Asia. The 1881 census showed the foreign residents to be,—Asiatics not natives of India, 540,989; British, 75,734; Europeans, 38,463; Africans, Americans, Australians, 6961.

The 540,989 Africans and Asiatics not natives of India comprised—

Abyssinians,	90	Jew,	7,620
Afghans,	3,191	Malay,	1,493
Arabs (Bombay 6090), 8,311		Mekrani in Kurachee, 5,285	
Armenians,	1,254	Manipuri (in Assam), 11,866	
Baluch, Panjab, 235,123		Nepalese,	31,182
" Bombay, 144,772		Parsee,	69,476
Bhotia in Assam,	339	Persian,	3,545
Brahui,	845	Siamese,	58
Kashmiri,	142	Syrian,	69
Chinese (Burma 12,109),		Turk,	923
"	13,340	Others,	2,056
Japanese,	3		

Most of the Parsees are permanent residents, and portions of the others must also be so classed, but the numbers suffice to show the continuous stream of immigrant races.

On the other hand, several of the Kolarian and

Dravidian races emigrate freely. Rangoon, Tavoy, Mergui, Malacca, Penang, and Singapore contain many of them; and the more distant Mauritius, Bourbon, S. Africa, West Indies, and Central America have received numbers. From 1876-77 to 1880-81, the following—

1876-77,	Left British India 10,036	Returned 4,485
1877-78,	" 25,219	" 4,400
1878-79,	" 22,092	" 5,588
1879-80,	" 17,426	" 7,185
1880-81,	" 16,794	" 7,061

Population.—The census taken of India in 1881 has not yet (October 14, 1882) been checked. It showed a population of 252,541,210 in an area of 1,477,763 square miles. In these numbers, however, are included provinces which are British proper, and also territories belonging to native princes and chiefs under treaty, subsidiary or other alliance, as here shown:—

British Districts—	Pop.	Area.	Sq m.
Bengal (Sikkim wanting), 68,829,920		155,997	401
Madras, 30,839,181		140,393	226
Bombay Brit. territory, 13,978,488			
Bombay Native States, 6,941,631		126,445	130*
Sind, 2,404,934			
Assam, 4,815,157		45,309	96
N.W. Provinces, 32,699,436		81,748	376
Oudh, 11,407,625		24,213	469
Panjab Brit. territory (Lahoul, Spiti, and Hazara excluded), 18,786,107		107,010	168
Central Provinces, 11,505,149		84,208	97
British Burma, 3,707,646		87,220	43
Coorg, 178,283		1,572	113
Ajmir, 453,075		2,711	167
Berar, 2,670,982	209,217,614	17,711	161
Native States—			
Mysore, 4,186,399		24,744	169
Baroda, 2,154,469		4,399	..
Travancore, 2,401,158		6,730	..
Cochin, 600,278		1,961	..
Rampur, 545,152		945	..
Nat. Garhwal or Tehri, 200,523		4,180	..
Native States, 3,853,282		14,742	..
Panjab, 5,370,096			..
Khadibar troops, 8,153			..
Rajputana St. (estim.), 11,005,149		130,989	77
Central India and Bundelkhand, 9,200,881		89,098	93
Hyderabad, 9,107,789	43,323,596	80,000	112
		262,541,210	
French Possessions, 285,922		178	..
Portuguese Possessions, 444,617	729,639	1,096	..

* Excluding Sind.

Enumerations of the British territories had been previously made between the years 1866 and 1875, and the following is a comparative statement of populations according to census of 1881 and the previous census:—

Province.	Census of 1881, both sexes.	Prev. Census.	Year of Census.	Difference p.c.
Bengal,	68,829,920	62,709,405	1871	+ 10
Assam,	4,815,157	4,050,054	1871	+ 19
Madras,	30,839,181	31,597,872	1871	- 2.4
Bombay,	13,978,488	14,038,359	1872	- .3
Do. Native States, 6,941,631		6,786,855	1872	+ 2.8
Total,	20,020,119	20,825,214		- 4
Sind,	2,404,934	2,192,415	1872	+ 10
N.W. Provinces (excluding Rampur and Native Garhwal), 32,699,436		30,769,056	1872	+ 1.6
Oudh,	11,407,625	11,219,675	1868	+ 1.0
Panjab (Brit. ter. only), 18,786,107		17,611,498	1868	+ 7
Central Provinces, 11,505,149		9,251,229	1872	+ 25
Berar,	2,670,982	2,231,565	1867	+ 20
British Burma,	3,707,646	2,747,148	1872	+ 35
Mysore,	4,186,399	5,055,412	1871	- 17
Coorg,	178,283	169,312	1871	+ 6
Ajmir,	453,075	428,268	1866	+ 6
Baroda,	2,154,469	2,000,225	1872	+ 8
Travancore,	2,401,158	2,508,891	1875	+ 4
Cochin,	600,278	601,114	1875	- 14
Grand total of 17 Provs	218,659,918	205,771,353	..	..

Provinces in India according to (*unchecked*) census of 1881, and total of sexes in previous census:—

Provinces.	Population according to Census of 1881.			Previous Census.
	Both sexes.	Males.	Females.	Both sexes.
Bengal, . . .	66,829,920	34,220,905	34,601,015	62,709,405
Assam, . . .	4,815,157	2,465,453	2,349,704	4,056,054
Madras, . . .	80,839,181	15,242,122	15,597,059	31,597,872
Bombay, . . .	13,978,488	7,164,824	6,813,664	14,038,359
Native States	6,941,631	3,575,471	3,366,160	6,786,855
Sind, . . .	2,404,984	1,311,006	1,093,978	2,192,415
N.W. Provs.,	52,699,436	17,041,020	15,658,416	30,769,056
Rampur, . .	545,152	284,593	260,559	..
Nat. Garhwal,	200,523	102,044	98,479	..
Total, . . .	38,445,111	17,427,657	16,017,454	..
Oudh, . . .	11,407,625	5,860,960	5,546,665	11,219,675
Punjab—				
British ter., .	118,786,107	10,180,727	8,596,380	17,611,498
Native States,	8,153	2,106,359	1,746,923	..
Khaibartroops	8,153	7,970	183	..
Total, . . .	22,647,542	12,904,056	10,843,486	..
Central Provs.,	11,505,149	5,801,794	5,703,355	9,251,229
Berar, . . .	2,670,982	1,378,997	1,291,985	2,231,565
British Burma,	5,707,646	1,087,426	1,720,220	2,747,148
Mysore, . . .	4,186,399	2,086,202	2,100,107	5,055,412
Coorg, . . .	178,283	100,854	77,429	168,312
Rajputana, . .	111,005,512	No sex	details.	..
Ajmir, . . .	458,075	243,904	209,171	425,268
Central India,	9,200,881	4,848,753	4,352,128	..
Baroda, . . .	2,154,469	1,123,311	1,031,158	2,000,225
Hyderabad, .	9,167,789	4,688,993	4,448,796	..
Travancore, .	2,401,158	1,197,134	1,204,024	2,308,891
Cochin, . . .	600,278	301,415	298,863	601,114
Grand total, .	252,541,210	123,211,827	118,166,371	..

* Population details for Sikkim wanting. Excluding Naga hills, not censused.

† Excluding population of the Lahoul, Spiti, and Hazara Districts, not censused.

‡ Approximate.

§ Population details for Pargah Districts wanting.

Note.—The difference of 11,163,512 between the grand total of columns 3 and 4 and that of column 2 is accounted for by the absence of sex details for the whole of Rajputana, for the Pargah Districts of Hyderabad, and for Independent Sikkim.

Food and Races.—Taking the populations and their means of subsistence, from the purely agricultural point of view, the country, as a whole, is under-peopled. In certain districts in Bengal and the N.W. Provinces, there are more cultivators than the land actually requires; but in Assam, the Punjab, Sind, the Madras plateau, and Burma, there are vast tracts of arable land unploughed. Even in portions of Bengal there are still reserves of virgin soil. The difficulty is to induce the population to distribute itself; though several of the races of India, the Tamil, and Teling, and Dhangar, in particular, freely emigrate to remote countries.

The supremacy of British India, while it has brought peace within the borders and improved the salubrity of localities, has not been unattended with difficulties. The population, which was kept down by the wars, pestilences, and famines of former times, has rapidly increased. In the ten years 1871 to 1881, the increase was 12,788,865, notwithstanding the occurrence of a severe famine, causing great loss of life in Mysore, in the Carnatic, in parts of Bombay, and in the N.W. Provinces. In the year 1789, one-third of the land lay unoccupied, but many jungle tracts and swamps have since been reclaimed. Some districts and provinces have become over-peopled; the surplus of some of the races are emigrating to Ceylon, to the Malay countries, to the Mauritius, Bombay, Africa, South America, and the West Indies; and the Government of India is looking at sparsely-peopled Burma as a country to be filled. In Burma, Assam, Berar, and Sind, the increase was the greatest; but in the years 1876 and 1877, a severe famine,

and consequent disease, occurred in parts of the Peninsula, which carried off numbers, and in the decade the decrease in the Bombay Presidency was 0.3 per cent., in that of Madras, 2.3 per cent., and in Mysore, 1,130,987, or 17 per cent.

During the decline of the Moghul empire and the raiding expeditions of the Mahrattas, several of the predatory races were actively plundering; armed bands of dacoits made their attacks even on large towns; and the armed and disciplined bodies known as Pindars, composed of all races, traversed the country, till they were finally swept away in the war of 1817–18–19.

But the greatest alteration in the martial habits of the people has occurred amongst the north-west frontier tribes, who had long been inured to war. When first, after the fall of the Sikh power, the British came in contact with the Pathan, Brahui, and Baluch races of the N.W. Frontier, not a year passed by without raids on the Indian territories, and armies were needed to repel them; but these raids are now extremely rare, and the democratic Councils are ready to afford redress. Perhaps the most remarkable instance of civilising a border race has occurred with the Karen on the borders of British Burma, where the Baptist missionaries, and notably Dr. and Mrs. Mason, have done more to subdue and civilize that race than armies could have accomplished.

India is pre-eminently *agricultural*. The (*unchecked*) census shows that the adult male population in 1881 was 62,002,461. Of these, 37,393,055 were engaged in agriculture, 8,137,082 were then labourers, and 8,749,270 were engaged in industrial avocations. Also, 4,136,430 were in domestic employ, 3,425,738 in commerce, and 2,401,630 in professions and Government service.

The bulk of the agriculturists profess some form of Hinduism. In the extreme south of the Peninsula, the Tamil-speaking race, who assume the titular designations of Mudali and Pillai, are there the most numerous; further north are the Canarese-speaking race, who are all agricultural; several tribes in Telingana, the Reddi, the Naidu, the Kamavaru, westwards as far as Beder, and southwards to Mysore and the Carnatic, are engaged in tillage; further north are the Uria race and the Gond, the great Kunbi and Mali races of the Mahratta country; and throughout the plateaux and the plains of Northern India, are the Jat, Kurmi, Kach'li, Koeri, Lodhi, Mali, Kaibartta, Sadgop, Khassa, and Gujar, with the pastoral Ahar, Ahir, Dhangar, Gadariya, Gop, Goala, Kurubar, and Rangar, the labouring population being the numerous landless, broken, non-Aryan tribes and clans, as the Pariah, Dher, Mhar, Mang, Dom, and others, who are dispersed, are scarcely yet freed from a condition of predial slavery, and evince no inclination to abandon their own fetich and shamanist cults.

The mountain ranges harbour many tribes, who have fled to them for shelter, or been thrust into them by more powerful races; and similarly the corner provinces, as of Kattyawar and Orissa, have a diversified population. In Kattyawar, of the old ruling races there remain the Jaitwa, Churasana, Salunki, and Wala, who exercised sovereignty in the country prior to the immigration of the Jhala, Jarija, Pramara, Kathi, Gohil, Jat, Mahomedans, or Mahrattas. So, in Orissa and Ganjam are the Bhumij; Bhuiya, Gond, Kandh; Khaira, Kol; Pan; Santal, Savara, Teling, and Urya.

The frontiers of British India are nowhere continuous with any highly-civilised state. On the north Kashmir, on the north-west Nepal, and in the south-east Burma and Siam, alone can claim possession of a literature. Both within the British bounds and beyond are many tribes and nations under democratic rule. The most powerful of these are on the north-west, and may be thus shown:—

Independent Tribes, dwelling along the outer face of the north-west frontier, and inhabiting hills, viz. —

Adjoining frontier of Hazara district, — Hussanzai.

Adjoining frontier of Peshawur district, — Judoon, Buncorwall, Swati, Ranizai, Osmankheli, Upper Mohmand.

Adjoining frontier of Peshawur and Kohat districts, — Afridi.

Adjoining frontier of Kohat district, — Buzoti, Sipah, Orakzai, Zaimusht Afghan, Turi.

Adjoining frontier of Kohat and Dehra Ismail Khan districts, — Waziri.

Adjoining frontier of Dehra Ismail Khan district, — Sheorani, Oshterani, Kasrani, Bozdar.

Adjoining frontier of Dehra Ghazi Khan district, — Khutran, Kosah, Lughari, Gurchani, Murri, Bugti, Muzari.

British Tribes within the frontier, and British subjects, inhabiting partly hills and partly plains —

Hazara district, — Turnouli, Gukkar, Doond and Sutti, Kaghan Syud, and other tribes of Hazara.

Peshawur district, — Yusufzai, Khaleel, Mohmand of the plains.

Peshawur and Kohat districts, — Khuttuk.

Kohat district, — Bungush.

Dehra Ismail Khan district, — Bunnoochi, Murwuti, Butani, chiefs of Tank, chiefs of Kolachi, chiefs of Dehra Ismail Khan, Nootkani, Loond.

Dehra Ghazi Khan district, — Dreshuk, Muzari.

The number of their fighting men has been estimated at about 170,000, which would represent a total population of one million. The fighting men of the principal tribes being—

Muzari, . . . 2000	Kasrani, . . . 1500	Mohmand, . . . 16,000
Bugti, . . . 1600	Ustrani, . . . 900	Otmian Khel, . . . 5000
Murri, . . . 2500	Sheorani, . . . 5000	Swati, . . . 6000
Gurchani, . . . 1200	Waziri, . . . 44,000	Bunerwal, . . . 2000
Lughari, . . . 3700	Turi, . . . 5000	Judun, . . . 2500
Khosa, . . . 4000	Zaimusht, . . . 4500	Chigurzal, . . . ?
Khutran, . . . 4500	Orakzal, . . . 29,500	Hussanzai, . . . 1700
Bozdar, . . . 2700	Kabal Khel, . . . ?	Akazai, . . . 1000
	Afridi, . . . 23,500	

The *Himalaya* on the north is the meeting ground of the Aryan and Turanian races, who in some places are curiously intermingled. In the extreme north-west are found the Dard, an Aryan race abutting on the Afghans on their west, and with the Balti, a Turanian race of Mahomedanized Tibetans, on the east. Here also are the Champa nomads who wander about the high level valleys of Rupshu, and likewise the Ladakhi cultivators in the valleys of Ladakh. The other Aryan races are the Pahari or mountaineers, the Kashmiri and the Dogra and Chibali who inhabit the outer hills.

The people occupying *Garhwal* and *Kamaon* are the Kanawari inhabitants of Bushahr, the Nilang, who do not differ from those of Hundes, and the inhabitants of the Bhotia Mahal of Kamaon and Garhwal, who are of mixed Tartar and Indian descent.

Farther to the east of these, the numerous valleys interspersed throughout the mountains of *Nepal* are occupied by various races. The features of the aboriginal tribes mark them as of Mongoloid origin. They are in the eastern part of the country. West of the Kali river the people are of

Hindu origin. Proceeding from west to east, the following tribes occur in Nepal, Sikkim, and Bhutan, viz. the Tibetans or Cis-Himalayan Bhutia, the Sunwar, the pastoral Gurung, the Magar, the Jariya, the Newar, the Dhenwar, Manjhi, Bhutia, Bhaura, Murmi, Newar, Kiranti, Limbu, Lepcha who inhabit Sikkim, and the Bhutanese or Lhopa.

Assam and the north-east frontier province of British Burma have many tribes in their valleys and on their borders, some of them still barbarians. Assam province is bounded on the north by the Himalaya, the frontier tribes from west to east being successively the Bhutia, Aka, Dofla, Miri, Abor, and Mishmi. On the north-east the Mishmi hills sweep round the head of the valley. Along its southern borders are (from west to east) the Kuki or Lushai tribes, the state of Hill Tipperah, the Kom Naga, Angami Naga, Singpho, Shan, Khaunti, and Kunoung, and the races in Manipur.

Between lat. 25° and 26° N. are tribes in the Garo, Khasia, and Jaintia hills, and in the valley are the Ahom (128,980), Chandal (122,457), Chutia (51,482), Kaibartia (128,525), Koch or Rajbansi (300,000), and Kolita (179,000).

Other tribes occupy the Ahar, Naga, Patkoi, and Barel ranges, as also the Chittagong and Arakan hill tracts, and the Yoma mountains separating British India from Independent Burma. These are the Shandoo, Khyen, Ka-mi, Khyen, Mri.

There are other and larger tribes of non-Hinduized aborigines interspersed amongst the civilised nations. In 1872, exclusive of those in the Madras Presidency and in the Feudatory States, they were estimated at 17,716,825.

Bengal, . . . 11,116,883	Berar, . . . 163,059
Assam, . . . 1,490,888	Mysore, . . . 89,067
N.W. Provinces, . . . 377,674	Coorg, . . . 42,516
Oudh, . . . 90,490	British Burma, . . . 1,004,991
Punjab, . . . 959,720	Bombay, . . . 711,702
Central Prov., . . . 1,669,835	

Nearly all that is known of their early history or origin has been derived from their physical appearance, which has proved them to belong to one or other of the great families of mankind. Mr. B. Hodgson writing from the Himalaya, and Mr. Logan writing from Penang, have laid great stress on this means of ascertaining their first appearance in India, in preference to the linguistic test.

Nearly sixty different tribes are specified among the aboriginal races in the provinces of Bengal and Assam. The most numerous of these are the *Santal*, of whom there are 850,000 in British territory alone, exclusive of others in the Tributary Mahals. The Santal dwell in villages in the jungles or among the mountains, apart from the people of the plains. They give their name to a large district, the Santal Parganas, 140 miles north-west of Calcutta.

The *Gond* are in numerous tribes, many of them semi-barbarous, others of them under rulers who claim a Rajput descent. They are partly under the Hyderabad Government, partly under the British in Chutia Nagpur, Berar, Orissa, and Ganjam, with 1,500,000 of them in the Central Provinces. The Maria Gond still use strong bamboo bows, which they hold with their feet and draw with their hands.

The *Bhumij* of Orissa, of Chutia Nagpur, and dispersed through various districts of Bengal,

numbering in all about 200,000, were known formerly as the Chuar, and distinguished for their martial habits.

The *Bhil* have no language of their own. They are scattered through a wide extent of country, from Dowlatabad in lat. 19° 57' N. to Mewar in 25° 26'. They are careless, indifferent cultivators, are decidedly predatory, and have suffered severely from all the regular governments; but they are unyielding, and only in 1882 compelled the Mewar Government to give in to their wishes. There are few wilder or more lawless tracts throughout the length and breadth of the Indian Peninsula than the hilly region occupied by the *Bhil*. The natives of Bombay style them *Kala-Puruj*, or black men.

Similar observations might be made regarding the widely-dispersed Gujar race, extending from the Panjab to Gujerat, which takes its name from them; or the great Kol tribes of the Vindhya; or the Koli of the northern parts of the Bombay Presidency; or the Meo, the Mhair, the Mina, the Ramusi, the Kollari, the Maravar, or the Baidara (Pindara). In the Annamly Hills are a whole series of broken tribes. Hamlets of long-haired, wild-looking Puliar, who live on jungle products, mice, or any small animals they can catch, and worship demons; Mundaver, who shrink from contact with the outside world, and possess no fixed dwellings, but wander over the innermost hills with their cattle, sheltering themselves under little leaf sheds, and seldom remaining in one spot more than a year; thick-lipped, small-bodied Kaders, 'Lords of the Hills,' a remnant of a higher race, who file the front teeth of the upper jaw as a marriage ceremony, live by the chase, and wield some influence over the ruder forest folk.

Princes and Chiefs of India.—Around and within the borders of British India are many Native States,—feudatories, tributaries, or in subsidiary alliance; and France and Portugal have small possessions, aggregating 1264 square miles, with populations numbering 729,639 souls. The Native States are as under:—

Central India and Bundelkhand (1881 census, 9,200,881), area, 89,098 sq. m.; pop. 8,360,571—

Sq. M.	Pop.	Sq. M.	Pop.
Gwalior, . . . 33,119	2,500,000	Baghelkhand	
Indore, . . . 8,435	635,450	Agency, . . . 1,250	235,000
Bhopal, . . . 8,200	769,200	Bhopawar	
Rewah, . . . 13,000	2,035,000	or Bhil	
Dhar, . . . 2,500	150,000	Agency	
Dewas, . . . 2,576	121,809	Goona Ag., . . . 4,520	157,634
W. Malwa		Deputy	
Agency, . . . 2,922	241,900	Bhil Ag.,	
Bhopal Ag., . . . 2,009	236,578	Grassia	
Bundelkhand		Chiefs,	
Agency, . . . 10,567	1,278,000		

Rajputana (1881 census, 11,005,512), area, 130,989 sq. m.; pop. 10,192,871—

Oodeypur	12,670	1,134,700	Jaysulmir, 16,447	72,000
or Mewar, . . . 14,465	1,750,000	Pertabgarh, 1,460	150,000	
Jeypore, . . . 37,000	2,850,000	Serohi, . . . 3,020	153,000	
Jodhpur or		Doongarpur, 1,000	175,000	
Marwar, . . . 3,797	627,000	Shahpura, 400	36,000	
Kotah, . . . 2,300	224,000	Lawa, . . . 18	2,597	
Bikanir, . . . 1,260	140,000	Hyderabad, . . . (1881),	80,000	9,167,789
Boondee, . . . 1,974	743,710	Berar, . . . 17,711	2,670,982	
Kerrowlee, . . . 2,730	320,000	Baroda, . . . 4,399	2,154,469	
Bhurtpur, . . . 724	105,000	Manipur, . . . 7,584	...	
Tonk, . . . 3,024	778,596			
Kishengarh, . . . 1,200	250,000			
Ulwar, . . . 1,200	250,000			
Dholepur, . . . 1,200	250,000			

Central Provinces, Chutia Nagpur, area, 29,112 sq. m.; pop. 1872, 1,049,710—

Sq. M.	Pop.	Sq. M.	Pop.
15 mahals, S.W. Frontier		Rairakhol, . . . 833	12,660
Agency, viz.—		Bamra, . . . 1,988	53,613
Bastar, . . . 13,000	78,856	Sakti, . . . 115	8,394
Karond or		Kawardha, . . . 887	75,462
Kalahandi, 3,745	133,483	Kondka or	
Raigarh		Chhuikhadan, 174	29,590
Bargarh, . . . 1,486	63,304	Kanker, . . . 1,000	43,542
Sarangarh, . . . 540	37,091	Khairagarh, . . . 940	122,264
Patna, . . . 2,399	98,636	Nandgaon, . . . 884	148,454
Sonpur, . . . 906	130,713	Makrai, . . . 215	13,648

Madras Presidency (1881 census, 3,001,436), area, 9818 sq. m.; pop. 1871, 3,247,689—

Travancore, 6,730	2,311,379	Banagana-Cochin, . . . 1,361	601,114	pilly, . . . 207	26,388
Puducottah, 1,380	293,809	Sundur, . . . 140			14,999

Bombay (1881 census, 6,941,631), area, 66,408 sq. m.; pop. 1871, 6,784,482—

Kolhapur, 3,184	802,691	Junjeera, . . . 325	71,996
Cutch (excl. of the Runn), 6,500	487,305	S. Mahratta Jaghira (8), 2,734	610,434
Mahi Kanta Agency, . . . 4,000	447,056	Satara Jaghira, . . . 3,508	417,295
Sind (Khairpur), . . . 6,109	127,000	Jawhar, . . . 534	37,406
Kattyawar Agency, . . . 20,338	2,312,629	Surat Ag., . . . 1,081	124,808
Palampur, . . . 8,000	502,586	Sawanur, . . . 70	8,837
Rewa Kanta, 4,792	505,732	Narukot, . . . 143	47,033
Cambay, . . . 350	83,494	Danga (23 States), 3,840	39,111
Sawantwari, 900	190,814		

N. W. Provinces, area, 5125 sq. m.; p. 636,543—

Garhwal or Tehri, . . . 4,180	129,530	Rampur, . . . 945	507,013
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Bengal, area, 37,988 sq. m.; pop. 2,328,400—

Sikkim, . . . 2,600	50,000	Chutia Nagpur	
Cooch Bahar, 1,307	532,565	Mahala, . . . 16,025	498,607
Hill Tiperah, . . . 2,869	91,759	Cuttack Mahala, . . . 15,187	1,155,509

Panjab (35), area, 114,742 sq. m.; pop. 5,370,096—

Kashmir and Jummoo, 79,784	1,534,972	Kalsia, . . . 168	68,910
Patiala, . . . 5,412	1,586,000	Pataudi, . . . 53	20,990
Bahawalpur, . . . 15,000	456,653	Loharu, . . . 285	19,800
Jind, . . . 985	190,475	Dujana, . . . 100	27,000
Nabha, . . . 804	226,155	Baghat, . . . 36	10,000
Kapurthala, 620	258,372	Jubbul, . . . 288	40,000
Mandi, . . . 1,000	145,939	Kumharsain, 90	10,000
Sirmur (Nahan), . . . 1,096	90,000	Bhajji, . . . 96	19,000
Kahlur (Bilaspur), 448	60,000	Mailog, . . . 48	9,000
Bushahr, . . . 3,320	90,000	Balsan, . . . 51	6,000
Hindur (Nalagarh), 256	70,000	Dhami, . . . 28	5,500
Keonthal (incl. Ratesh), . . . 116	50,000	Kuthar, . . . 20	4,000
Maler Kotla, 164	91,650	Kunhiar, . . . 8	2,500
Faridkot, . . . 600	68,000	Mangal, . . . 13	800
Chamba, . . . 3,216	130,000	Bija, . . . 4	800
		Darkuti, . . . 8	700
		Tarooh, . . . 67	10,000
		Sangri, . . . 16	700

Mysore (1881 census, 4,186,399), area, 24,744 sq. m.; pop. 1871, 5,055,412—

Bangalore, 2,901	828,354	Hassan, . . . 1,809	668,417
Kolar, . . . 1,891	618,954	Shimoga, . . . 3,797	498,976
Tumkur, . . . 3,420	632,239	Kadur, . . . 3,075	333,925
Mysore (with Yelandur), 2,980	943,187	Chitaldrug, 4,871	531,360

French Possessions (1877 census, 280,381), area, 178 sq. m.; population, 285,022—

Pondicherry, 113	156,094	Karikal, . . . 52	92,516
Chander-nuggur, . . . 3	22,496	Mahe, . . . 5	8,442
		Yanson, . . . 5	5,474

Portuguese, area, 1086 sq. m.; pop. 444,617—

	Sq. M.	Pop.	Sq. M.	Pop.
Goa, . . .	1,062	392,234	2	13,898
Daman, . .	22	36,485		

Straits Settlements, . .	1,443	423,384	Ceylon, . .	24,702	2,638,540
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British Empire of India, its Empress and its Princes.—Since the year 1858, the position of Great Britain has been Imperial. The changes introduced in the government of British India on the suppression of the mutiny, altered the position of the native princes. Up till that time, many native states had affected an equality with the British Indian Government, as administered by the East India Company, and that assumption had even led to a war with Gwalior in 1843. But the mutiny swept away the last relics of the Delhi Empire, and with them the East India Company's rule, and the princes of India found themselves brought face to face with their sovereign, Queen Victoria. The maharaja of Patiala then sought for the recognition of himself and his house as an Indian noble of the British empire. Above all rewards for his great services to the empire in those days, he asked for perpetuity for his house and honours, and Sir John Lawrence, Lieutenant-Governor of the Panjab, worked out the chief's idea into a recognition of the right of adoption on the failure of natural heirs; and, after a reference to Her Majesty's Government, the following sunnud or patent of nobility, of 11th March 1862, was framed:—"Her Majesty being desirous that the governments of the several princes and chiefs of India, who now govern their own territories, should be perpetuated, and that the representation and dignity of their houses should be continued: In fulfilment of this desire, this sunnud is given to you, to convey to you the assurance that, on failure of natural heirs, the British Government will recognise and confirm any adoption of a successor made by yourself, or by any future chief of your state, that may be in accordance with Hindu law, and the customs of your race. Be assured that nothing shall disturb the engagement thus made to you, so long as your house is loyal to the crown, and faithful to the conditions of the treaties, grants, or engagements which record its obligations to the British Government. (Sd.) CANNING."

The following is a list of princes to whom it has been given, but others have since been honoured with it, and all who hold that patent are nobles of the British Indian Empire:—

Ajmergarh, Raja, Bundelkhand.	Boondee, Raja, Rajputana.
Akalkote, Raja, S. Mahratta Country.	Bulsun, Chief, Panjab.
Alipootra, Jaghirdar, Bundelkhand.	Bungunpully, Jaghirdar, Ceded Districts.
Banoda, Chief, Kolhapur.	Bussahir, Chief, Panjab.
Banwarra, Chief, Rajputana.	Bwata, Raja, Central Provinces.
Baoner, Nawab, Baoner.	8 Callinger Chobeys, Bundelkhand.
Bejah, Chief, Panjab.	Cambay, Nawab, Cambay.
Behroo, Jaghirdar, Bundelkhand.	Cashmir, Maharaja, Panjab.
Behut, Jaghirdar, Bundelkhand.	Chumba, Chief, Panjab.
Belaupore, Chief, Panjab.	Chutterpore, Raja, Bundelkhand.
Benares, Raja, Benares.	Cochin, Raja, Cochin.
Beronda, Raja, Bundelkhand.	Cooch-Bahar, Raja, Cooch-Bahar.
Bhagul, Chief, Panjab.	16 Chiefs Tributary Mahals, Orissa.
Bhopul, Begum, Bhopul.	Dewas, Chief, Central India.
Bhowanagar, Chief, Sholapur.	Dhar, Chief, Central India.
Bhughat, Chief, Panjab.	Dharni, Chief, Panjab.
Bhujee, Chief, Panjab.	Dholapore, Raja, Rajputana.
Bhurtpur, Maharaja, Rajputana.	Dhoorwee, Chief, Bundelkhand.
Bikanir, Maharaja, Rajputana.	Dogana, Nawab, Dogana.
Bijawar, Raja, Bundelkhand.	
Bijna, Chief, Bundelkhand.	

Durkote, Chief, Panjab.	Moodhole, Chief, S. Mahratta Country.
Dhurmipore, Chief, Kolhapur.	Mundee, Chief, Panjab.
Doongurpore, Chief, Rajputana.	Mungal, Chief, Panjab.
Duffay, Jaghirdar, Satara.	Myhore, Chief, Bundelkhand.
Duttia, Raja, Bundelkhand.	Mylog, Chief, Panjab.
Edur, Chief, Kolhapur.	Nabha, Raja, Panjab.
Furreedkote, Raja, Panjab.	Nagode, Chief, Bundelkhand.
Gerowlee, Jaghirdar, Bundelkhand.	Nahun, Chief, Panjab.
Ghurwal, Raja, N. W. Provinces.	Nalagurh, Chief, Panjab.
Gourihar, Jaghirdar, Bundelkhand.	Ninbalpur, Jaghirdar, Satara.
Gaekwar, Baroda.	Nowanuggur, Chief, Kolhapur.
Holkar, Central India.	Nyagaon Behal, Jaghirdar, Bundelkhand.
5 Hasht Bhya Jaghirdars, Bundelkhand.	Oodeypur, Maharaja, Rajputana.
Hyderabad, Nizam, Hyderabad.	Paharee, Chief, Bundelkhand.
Jeypore, Maharaja, Rajputana.	Puducottah, Chief, Puducottah.
Jheend, Raja, Panjab.	Punnah, Raja, Bundelkhand.
Jhallawar, Raja, Satara.	Punt Prithoe Nidhee, Satara.
Jigner, Jaghirdar, Bundelkhand.	Partabgurh, Raja, Rajputana.
Joobul, Chief, Panjab.	5 Putwurdhuna, S. Mahratta Country.
Jodhpur, Chief, Rajputana.	Patiala, Maharaja, Panjab.
Jusso, Jaghirdar, Bundelkhand.	Rajpootla, Chief, Kolhapur.
Jrjsumir, Chief, Rajputana.	Rewah, Raja, Bundelkhand.
Karonde, Raja, Central Provinces.	Satara, Jaghirdars, Satara.
Keonthul, Chief, Panjab.	Sawantwari, Chief, Sawantwari.
Kerrowlee, Chief, Rajputana.	Seroth, Chief, Rajputana.
Kishengari, Chief, Rajputana.	Shahpura, Raja, N. W. Provinces.
Khuleen, Chief, Panjab.	Sindia, Central India.
Kolhapur, Raja, Kolhapur.	Sohawal, Chief, Bundelkhand.
Koonharain, Chief, Panjab.	Soonet, Chief, Panjab.
Koonhar, Chief, Panjab.	Sundur, Chief, Bellary, in Ceded Districts.
Kotah, Chief, Rajputana.	Sumphur, Raja, Bundelkhand.
Kothur, Chief, Panjab.	Sirdur Shumsher Singh, Sindhanwallah, Panjab.
Kothoe, Jaghirdar, Bundelkhand.	Surroela, Chief, Bundelkhand.
Kunhya Dhana, Jaghirdar, Bundelkhand.	Tehree, Chief, Bundelkhand.
Kuppoorthulla, Raja, Panjab.	Taj Singh, Panjab.
Kutch, Chief, Gujerat.	Toree, Chief, Bundelkhand.
Legasie, Jaghirdar, Bundelkhand.	Travancore, Maharaja, Travancore.
Mahrata, Chief, Central Provinces.	Tureesh, Chief, Panjab.
	Ulwar, Chief, Rajputana.

The sunnud nobles alone constitute the patriariate of India; they govern a population and area larger than those of France and Belgium. Their troops far outnumber the British European and sepoy army; and their ordnance, even that part of it which is serviceable, is equal in number to the British. According to the *Times* newspaper of 29th July 1879, they have 5252 guns, with 514,625 soldiers, viz. artillerymen, 9380; cavalry, 64,172; and infantry, 241,068.

In 1881 the entire number of princes and chiefs of British India was 601, as under; but only about a fourth part of their number have the patent of hereditary nobility:—

a. <i>Dehkan</i> , viz. :—	Mysoor, Maharaja.
Hyderabad, Nawab.	Kashmir, Maharaja.
Baroda, Gaekwar.	
Baluchistan, Khan.	
b. <i>Central India Agency</i> , viz. :—	
Gwalior, Sindia.	Tonk, Thakur.
Indore, Holkar.	Dhangan, Thakur.
Dewas, Raja, Senr.	Kharai Jhalaria, " Karandia, "
" " Junr.	Bagli, " Patharia, "
	Bhoja Kheri, " Singhana, "
c. <i>Bhopal Agency</i> , viz. :—	
Bhopal, Begum.	Larawad.
Baggarh.	Agra Barkhara, Thakur.
Narsingarh.	Thakur.
Khilchipur.	Hirapur, " Dutahia, "
Kurwai.	Ranigarh, " Jabria Bhl, "
Maqsoodangarh.	Kamalpur, " Tappa, "
Muhammadsagarh.	Darya Kheri, " Jhalera, "
Pathari.	Kharma, " Duleta, "
Basoda.	Dhabla Dhir, " Kakar Khari, "
d. <i>Bundelkhand Agency</i> , viz. :—	
Orehha Tehri.	Panna.
Datia.	Charkhari.
Semthar.	Ajaigarh.
	Bijawar.
	Ch'hatarpur.
	Baoni.

BRITISH INDIA.

BRITISH INDIA.

Jigai.	Tori Futehpur.	Bihat.
Baraunda.	Pahari Banka.	Beri.
Surih.	Jaso.	Gaurihar.
Alipura.	Lughasi.	Garrathi.
Khanadhdana.	Paldeo.	Kamta Rajaula.
Dharwai.	Pakra.	Naigawan Ribahi.
Bijua.	Taron.	Pathur Kachhar.
	Bhaissanda.	

e. Baghelkhand Agency, viz. :-

Rewa.	Maihar (Myhere).	Kothi.
Nagode.	Sohawal.	Sitpura.

f. Western Malwa Agency, viz. :-

Rutlam.	Jhabus.	Bara Barkhera.
Sailana.	Ali Rajpur.	Chota,
Jaora.	Johat.	Dhotra, Thakur.
Sitanian.	Kathiwar.	Kachehi Baroda,
Ajrauda, Thakur.	Kathiwar.	Thakur.
Barra,	Ratanmal.	Barwani.
Richraud,	Dhai and Dharm.	Jannia.
Bilanda,	rui.	Rajgarh.
Dhabri,	Holkar.	Kothide.
Dutana,	Pitlawad.	Garhi.
Jawasia,	Chikalda.	Bharudpura.
Kaluhara,	Sudia.	Chiktihar.
Lalgarh,	Amjhara.	Bagand (of Dewas)
Narwar,	Dikthan.	Raghogarh.
Nungau,	Sagar.	Paron.
Naulana,	Piplia.	Umri.
Panth Pip-	Bag.	Bhadaura.
lunda,	Bakanir.	Gurra.
Shingarh,	Mauwar.	Sirui.
Dhar.	Nunkhera.	Dharnaoda.
Bakhtgarh.	Kali Baori.	Khaltaun.

g. Rajputana Agency, viz. :-

Oodeypur or	Bhurtpur.	Bikanir.
Mewar.	Kerrowlee.	Fouk.
Dungarpur.	Lawa.	Boondee.
Portabgarh.	Jeyaulmir.	Shahpura.
Banswara.	Serohi.	Ulwat.
Jeypur.	Kotah.	Dholpur.
Kishengarh.	Marwar or Jodhpur.	Jhalakwar.

h. Madras, or Fort St. George Government, viz. :-

Travancore.	Paduecottah.	Sundur.
Cochin.	Banaganapilly.	

*i. Bombay, or Fort George Government, i to z, viz. :-**j. Cutch.**k. Palanpur Agency, viz. :-*

Palanpur.	Wao.	Bhabhar.
Radharpur.	Warahi.	Kaskrej.
Tharad.	Santalpur.	Deodar.
Morwara.	Chadchat.	Terwara.
	Suigam.	

l. Mahi Kanta Agency, viz. :-

Edar.	Dhabha.	Tajpuri.
Pol.	Wasna.	Waktapur.
Mansa.	Rupal.	Hapa.
Mohanpur.	Dudhalya.	Dedhrota.
Sathosna.	Magore.	Tinba.
Danta.	Waragam.	Mayona.
Malpur.	Sathamba.	Tejpura.
Ghorasar.	Ramus.	Munadpur.
Amulyara.	Bolundra.	Doloi.
Ranasa.	Likhi.	Kasalpura.
Pethapur.	Gubat.	Viroda.
Hol.	Hadol.	Palaj.
Warsora.	Satlasan.	Rampura.
Panadra.	Bhalasna.	Ippura.
Kharal.	Prempur.	Umadi.
Kalosan.	Kadoli.	Motakotarna.
Walsua.	Kherwara.	Rampura.
	Dedol.	

m. Rewa Kanta Agency, viz. :-

Rajpipla.	Sankhera Meenas,	Alwa.
Ch'hota Udepur.	viz. :-	Gad.
Baria.	Mandwa.	Wajiria.
Lunawara.	Sanora.	Nangam.
Balasinor.	Agar.	Wasau.
Sunth.	Sindiapura.	Bihora.
Kadana.	Dewahia.	Dudhpur.
Sanjeli.	Wanmala.	Wara.

Chorangla.	Gotardi.	Uneta.
Deroli.	Kasia Pagi.	Bhadarwa.
Wardle.	Moka Pagina.	Dhari.
Sarsanda.	Muwara.	Racka.
Timbi.	Sitar Gothra.	Ch'hahar.
Ghulpur.	Jesar.	Waktapur.
Bhiloria.	Aughad.	Rajpar.
Rampura.	Sihora.	Itwad.
Jiral Kansoli.	Amrapur.	Warnoli Moti.
Churesar.	Kanora.	Nani.
Nalia.	Warnol Mal.	Poicha.
Pandu Meenas,	Nuhara.	Pandu.
viz. :-	Junkha.	Dorka.
Mewali.		

n. Political Agency, Kattyawar, viz. :-

Junagarh.	Vitalyarth.	Sisang Chandli.
Nawanagar.	Kerria.	Menyni.
Bhaunagar.	Majpur.	Bladwa.
Dhrangadra.	Karnar.	Rajpura.
Morni.	Dasara.	Gouridar.
Wankaner.	Patni.	Kotharia.
Palitana.	Jhinjuwara.	Lodhika.
Dural.	Wanod.	Pal.
Limri.	Bharejda.	Gatka.
Rajkot.	Roi Sankli.	Wadali.
Gondal.	Bahra Cha-	Virwa.
Wadiwan.	mardi.	Shapur.
Jafarabad.	Derdi Janhoi.	Kankiah.
Parbandar.	Kothra Pitha.	Mahuwa.
Wala.	Kaupur Ishwara.	Khirasra.
Thau Lakhtar.	Bhadli.	Julia Dewani.
Bantwa.	Samadhiala.	Kotra Nayani.
Jusdon.	Kariana.	Amrapur.
Sayla.	Anandpur.	Itanpur Dha-
Chora.	Chotila.	monka.
Muli.	Khambalia.	Chamardi.
Lathi.	Palyad.	Toda Todi.
Bajana.	Rhimora.	Katoria.
Kotra Sangani.	Bamanbor.	Pachoura.
Virpur.	Mewasa.	Wouri Wascha.
Mullia.	Matra Timba.	Songarh.
Jetpur.	Banoora.	Pacheyam.
Didan.	Itia Yadhala.	Chitrawao.
Wasawar.	Choliari.	Ramanaka.
Bagara.	Nilwala.	Warod (Gobal-
Wichwawad.	Sadamra Dhan-	war).
Kuntharia.	Jalpur.	Alampur.
Karel.	Syapur.	Dhola.
Kamalpur.	Rampurda.	Gadhad.
Khumhalao.	Akda.	Gadhila.
Gedi.	Bhri.	Khijria.
Chuchana.	Anreli (Gaek-	Bhogwadar.
Chulala.	war).	Samadialla Cha-
Jakhua.	Kaner.	paria.
Khandia.	Kathrota.	Lawa.
Talsana.	Khijudia Naman.	Wari Dharwala.
Sani.	Garsuli Moti.	Wangadra.
Dewalia.	Nani.	Agavej.
Darod.	Gadbia.	Shanala.
Pulali.	Charkha.	Shiroda.
Bhuthan.	Jhamka.	Rajpara.
Bhulsamra.	Dholarwa.	Paa.
Bhudwana.	Bholzan Baldoi.	Dedara.
Laliad.	Nanawad.	Julia Managi.
Wunala.	Takhapadar.	Chok.
Samla.	Monwel.	Ranjarda.
Sahuka.	Vekria.	Shntanes.
Untri.	Wazwari.	Wadal.
Aukewalia.	Halaria.	Morchopua.
Jhampodar.	Kamadhia.	Bhandaria.
Kherali.	Dahira.	Bidanones.
Gundiah.	Gujasara.	Junopodar.
Jhammar.	Randhia.	Sheoliradar.
Dudhrej.	Khijoria.	Rohiala.
Bhalala.	Silana.	Samadrila.
Rajpur.	Kuba.	Gandhol.
Warod (Jhala-	Dhraf.	Datha.
war).	Mulila Deri.	Vejanones.
Wanna.	Satodar Waori.	Ranigam.

o to z. Political Agencies of Kaira, Panch Mahal, Surat, Thana, Kolaba, Kandesh, Satara, Akalkot (Shola-
pur), Kolhapur and S. Maharashtra Country, Sawant-
wari, Dharwar, Shikarpur, viz. :-

Cambay.	Karakot.	Bansda.
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Sachin.	Daplapur.	Chandelghat or
Dharampur.	Akalkot.	Kumdhigat.
Jawhar.	Kolhapur and S.	South Mahratta
Janjira.	Mahratta States,	States, viz. :
Dang States, viz.	viz. :	Miraj (senior).
Chikhli.	Kolhapur.	" (junior).
Gawahali.	Vishalgad.	Kurandwad
Kathi.	Inchal Karangi.	" (senior).
Singpur.	Banra.	" (junior).
Nawalpur.	Kagal.	Jamkhandi.
Nal.	Kapai.	Mudhol.
Satara Jaghira, viz.	Torgal.	Ramdrug.
Phaltan.	Malkapur.	Sangli.
Bhor.	Amba.	Sawantwari.
Jath.	Prathanwali.	Savanur.
Aundh.	Ajra.	Khairpur (Sind).

aa. Bengal, Lieutenant-Governor, viz. :—

Sikkim.	Chang Bhakar.	Baramta.
Cooch-Bahar.	Sarai Kala.	Nazagarh.
Hill Tipperah.	Kharsaman.	Khandpara.
9 Chutia Nagpur	17 Orissa Mahals,	Dasapalla Jorsura.
Mahals, viz. :—	viz. :—	Tigaria.
Sarguja.	Talcher.	Nilgiri.
Oodeypur.	Dhenkanal.	Keunghar.
Jashpur.	Ranpur.	Pal Lahara.
Gangpur.	Morbhanj.	Hindol.
Bonai.	Bod.	At'garh.
Korea.	Ath' Malik.	Narsinhpur.

bb. N. W. Provinces and Oudh, viz. :—

Garhwal or Tehri. | Rampur.

cc. Panjab Government, viz. :—

Patiala.	22 Simla Hill	Jubbal.
Jhind.	States, viz. :—	Kumharsain.
Nabha.	Maler Kotla.	Bhajji.
Bahawalpur.	Kalsia.	Mailog.
Chamba.	Sirmur (Nahan).	Balsan.
Kapurthalla.	Kahlwa (Bilaa-	Dhami.
Mandi.	pur).	Kuthar.
Suket.	Bashahr.	Kunhiar.
Faridkot.	Hindur (Nala-	Mangal.
Pataudi.	garh).	Bija.
Laharu.	Keonthal.	Darkuti.
Doojana.	Baghal.	Saroch.
	Baghat.	Sangri.

dd. Central Provinces, viz. :—

Bastar.	Sonpur.	Kondka or Oh'hin-
Karond.	Kaira-Khal.	kadam.
Raigarh Bargarh.	Baura.	Kanker.
Saragarh.	Sakti.	Khairagarh.
Patna.	Kawarda.	Nandgam.
		Makrai.

ee. Assam, viz. Manipur.

The most powerful of these rulers are the nizam of Hyderabad, the maharajas Sindia, Jey-pore, Travancore, Jummoo and Kashmir, Jodhpur, Holkar, Patiala, Oodeypur, Bhartpur, the Gaekwar of Baroda, and the Begum of Bhopal. Some of the princes and nobles are wealthy, as also are many of the great zamindars who hold lands on a permanent settlement, and keep up an almost regal state. Many of them freely aid in schemes for improvement.

Titles.—Asiatics are ceremonious in all the duties of life; they have been so from the most ancient times, and their rulers have likewise had the custom of displaying standards and of using crests or armorial symbols, such as the chank shell, the peacock, a palanquin, a lamp, a lion, a sunshade, an umbrella; these were not humble honours, the satrap of the Greeks being the Châtra-pati, lord of the umbrellas. Queen Victoria marked the relative rank of the princes of India by an order in Council of the 26th June 1867, regulating the number of guns to be allowed in saluting them.

8 princes had 21 guns.	5 princes had 13 guns.
9 " " 19 "	31 " " 11 "
13 " " 17 "	11 " " 9 "
17 " " 15 "	

and seven nobles had personal salutes allowed of 13 to 21 guns.

Timur had ° as his arms, supposed to represent the three regions over which he ruled. His full titles in the height of his power were Sultan, Kamran, Amir, Kutb-ud-Din, Timur, Kur Khan, Sahib-i-Kuran, meaning 'sovereign, ruler, noble, polar star of the faith; Timur, of the lineage of sovereign princes, lord of the grand conjunctions.' Amongst other titles, three of the emperor of China are, Tien-tsze, son of heaven; also Kwa-jen, the man who stands by himself, and Kwa Kuin, solitary prince. Anak-Agong, son of heaven, is a title of the raja of Lombok.

In 1808, Fattah Ali Shah, emperor of Persia, instituted the order of the Lion and Sun, Sher-ur-Khurshid, to decorate foreign envoys who had rendered services to his government, and it is now given to Persian subjects. In the treaty of peace with Persia of 4th March 1857, the emperor is styled 'His Majesty, whose standard is the sun; the sacred, the august, the great monarch, the absolute king of kings of all the States of Persia.' At the same time, his ambassador, then at the court of France, was styled 'His Excellency, the abode of greatness, the favourite of the king; Firokh Khan, Amin-ul-Mulk, the great ambassador of the mighty State of Persia.'

In Mewar, the bala band, a head fillet, the diadem of the Greeks, is the symbol of honour; in Burma, the taal-wee chain is a badge of nobility; in China, small globes, or buttons, as they are called, of mother-of-pearl and othersubstances, are used for distinction. In Burma the figure of a peacock and of a hare are painted on the king's throne, a peacock is borne on the royal standard, and Ne dwet bhu yeng, sun-descended monarch, is one of the Burmese royal titles.

The titular designations of the Mahomedan rulers of Southern Asia are almost all formed of Arabic words, with a few derived from the Persian; but in addressing the chiefs of British India, Arabic, Persian, Hindi, and English words are now all intermixed. Along the borders and within, the ordinary royal titles of Mahomedan princes are amir, khan, khakan, malik, malikah (feminine), mir, nazim, nizam, padshah, shah, shahinshah, sultan, bahadur, jung, khan, daulah, umra, jah, and nawab; royal Hindu titles being adiraja, jam, rae, raja, rao, rana, rawal, maharana, maharawal, rama-raja, siwai, thakur, wali, zamarin; and both Mahomedans and Hindus assume takhallus or literary titles.

The Indian Government addresses the Rajput ruler of Jummoo and Kashmir as 'His Highness Ranbir Singh Bahadur, Grand Commander of the Most Exalted Order of the Star of India, Companion of the Indian Empire, Sipar-i-Sultanat (Shield of the Sovereignty), Councillor of the Empress of India, Honorary General in the Imperial Army, Chief of Jummoo and Kashmir; ' similarly Kalab-ali-Khan, the Mahomedan ruler of Rampur, is styled 'His Highness Farzand-i-Dil-Pazir-i-Daulat-i-Inglishia, Kalab Ali Khan, Nawab of Rampur, K.G.C.S.I. and C.I.E.,' the Persian words meaning Heart-loved Son of the British Government. The Governors-General have always followed it. In 1805 Sir George Barlow's seal was engraved with Persian words, signifying the cream of the princes, mighty in dignity, high in honour, exalted in position, the noble of nobles, Sir

George Hilario Barlow, Baronet, Bahadur, Governor-General of the Countries under the Government of the English Company in India, Devoted Servant of the victorious Emperor Shah Alam Bahadur, 1805, year 1220 Hijri. The British Indian Government has now adopted the practice of the native princes in freely granting titles.

Administration.—In 1784, Mr. Pitt, while Prime Minister of Great Britain, brought in a bill to establish a Board of Control over the East India Company. It consisted of six members of the British ministry. It became known as the India Board, and the duties allotted to it were to check, superintend, and control all acts, operations, and concerns which in any way related to the civil and military government of the East India Company's territories; and a secret committee was at the same time authorized, consisting of the President of the Board of Control, with the chairman, or the deputy-chairman, or one of the East India Company's directors.

The directors of the Company consisted of twenty-four members, elected by the votes of the shareholders. The directors elected their own chairman and deputy-chairman, each of whom received a salary of £500 a year, the pay of each of the other directors being £300. Their patronage was great. Governors for India, commanders-in-chief, judges, and bishops were nominated by the British ministers, but the directors appointed all other covenanted and commissioned officers for the civil, military, medical, and naval services—and they averaged about 374 annually.

The mutiny of the Bengal army, and the rebellion in Northern India, was yet scarcely suppressed in 1858, when, on the 1st September of that year, the Court of Directors was abolished, and the government of British India was transferred from the East India Company to Queen Victoria, and a proclamation to the princes, chiefs, and people was made at Allahabad on the 1st November. A Secretary of State, a member of the British Cabinet, with a Council of fifteen members, took the directors' places. The Council is now appointed for ten years, but may be re-appointed for a further five years for special reasons. In 1861, the Indian Councils Act was passed, augmenting the Councilors by the addition of non-official members, the Governor-General was raised to the rank of Viceroy; and by another Act the supreme courts of Calcutta, Madras, and Bombay were amalgamated with the courts of Sadr Adalat of the three presidencies, and the united body designated the High Court of Judicature.

In the proclamation of 1858, Queen Victoria accepted all the treaties made by the East India Company, disclaimed all desire for extension of territory, or to impose the Christian religion on the people; the public service was declared open to all the Queen's subjects, of whatever race or creed; and royal clemency was extended to all, except such as had taken part in the murder of British subjects. In that proclamation, the British sovereign was designated,—Victoria, by the grace of God, of the United Kingdom of Great Britain and Ireland, and of the colonies and dependencies thereof in Europe, Asia, Africa, America, and Australia, Queen, Defender of the Faith. And subsequent to this, on the 28th April 1876, Queen Victoria assumed the title of *Indiæ Imperatrix, Empress*

of India, with the royal style and titles of Victoria, by the grace of God, of the United Kingdom of Great Britain and Ireland, Defender of the Faith. Proclamation of this was made by the Viceroy on the 1st January 1877, in an imperial camp at Delhi, at which the princes of India were present. The maharajas Sindia of Gwalior and Ranbir Singh of Jummoo were raised to the rank of generals; and the orders of the Bath were bestowed on Sindia and the rajas of Bundi, Bhartpur, Benares, Kolhapur, Dhar, Drandra, the jam of Nawanagar, and the nawab of Banaganapilly. That part of the 1858 proclamation which related to employment in the public service was a repetition of 3 & 4 Will. iv. c. 85, sec. 87, which declared that no native of the said territories, nor any natural-born subject of His Majesty resident therein, shall, by reason only of his religion, place of birth, descent, colour, or any of them, be disabled from holding any place, office, or employment under the said Company.

The British administration in India was long purely that of a military government, and the entire policy necessarily conformed to military necessities. Only towards the middle of the 19th century has the condition of the country permitted its British rulers to throw the energy of the government into the path of peaceful development of its resources. The East India Company had governed the country on the simple terms of cheapness and non-intervention. But India has since taken its character from British rule, and has expressed a more positive policy than before. Great improvements in the laws have been made; more economical justice, more extended education, increased irrigation works, and larger appliances of European capital and energy to the undeveloped resources of the country. The prominent Secretaries of State for India have been Lord Stanley, Sir Charles Wood (Lord Halifax), Earl de Grey, Viscount Cranborne, Sir Stafford Northcote, Duke of Argyll, Marquis of Salisbury, Marquis of Hartington.

British India since 1860 has been subdivided into local administrations: Assam, Bengal, Bombay, British Burma, Central Provinces, Madras, N.W. Provinces and Oudh, Panjab. Berar is temporarily assigned. The Government of India has retained direct control over Ajmir, Berar, the Andaman islands, Nicobar islands, Coorg, the provinces of Central India and Bundelkhand, also over the political relations with Baroda, Hyderabad, Manipur, and Rajputana, and with the princes and tribes on the borders; all these are supervised by a Viceroy and Governor-General in Council. But the presidencies of Madras and Bombay, each with a Governor, Commander-in-chief, and a Council composed of officials, are in direct correspondence with the Secretary of State as well as under the Governor-General. Berar is administered for the nizam of Hyderabad. The provinces are administered by a covenanted civil service, an uncovenanted civil service, and military officers of the staff corps in civil employ. Each province is subdivided into zillahs or districts, under collector-magistrates or deputy collectors and commissioners, with joint, deputy, and assistant magistrates. In the Bengal Presidency, these districts are in most cases grouped into divisions, each under a commissioner, supervised by a revenue board or financial commissioner. In

Great Britain, counties average 1000 square miles in extent. In India, the total number of Districts is about 238. They vary greatly in size and number of inhabitants. The average area is 3778 square miles, ranging from 6612 square miles in Madras to 1999 square miles in Oudh. The average population is 802,927 souls, similarly ranging from 1,508,219 in Madras to 161,597 in Burma. In Bombay there are two revenue commissioners, between whom the superintendence of the collectorates are divided. These revenue commissioners correspond immediately with Government, and are also police commissioners of their divisions.

Madras, Bombay, and Bengal have each a Legislative Council, as well as a High Court of Judicature. These Councils, as well as the Legislative Council of the Governor-General, consist of executive members of Government, of two representatives of the British mercantile community, and two or three representatives of the natives, as extraordinary members. The United North-Western Provinces and Oudh have a High Court, and the Panjab a Chief Court. The Governor-General's Council for making laws, legislates for all India in general, and for the provinces which have no legislatures of their own, in detail, these provinces being represented by officials. Every Act of the three subordinate councils must receive the sanction of the Governor-General before it can become law; and the Secretary of State for India may advise Her Majesty to veto any act of the Governor-General's Council.

The following may be accepted as representing the portions of India governed directly by British officials, and those administered indirectly through native chiefs with subsidiary sovereign powers:—

British, . . . Sq. m. 902,500 Pop. 191,411,434
 Feudatory, . . . „ 575,263 „ 49,036,627

With the increase of empire, the Governor-General's Council had become overburdened with details, and Lord William Bentinck, Sir Charles (Lord) Metcalfe, Lord Dalhousie, and Mr. Bayley had advised that there should be for all India, one Governor-General, one Supreme Executive Council, one Legislative Council, and one Commander-in-Chief, with four subordinate generals under lieutenant-governors, each with a council or board and four lieutenant-generals, and that details should be left to the local governments. These views, somewhat modified, are being gradually given effect to. In 1853 the Governor-General ceased to exercise any more direct supervision over Lower Bengal than over the rest of India. In 1874 Assam was separated from Bengal and made into a chief commissionership; and in 1877 Oudh and the N.W. Provinces were amalgamated, under a lieutenant-governor. In 1882 there is one Commander-in-Chief of all India, who specially attends to the Bengal army and European corps, with Commanders-in-Chief of the Madras and Bombay Presidencies, all of whom have seats in Council.

Every order issued from any of the secretariat departments of the supreme Government, runs in the name of the Governor-General in Council. Up to Lord Canning's administration, all matters were in truth so disposed of; but Lord Canning remodelled it into the semblance of a cabinet, with himself as president, and each member of the Government now holds a separate portfolio, and,

with the permanent Government secretary, despatches the ordinary business connected with it on his own responsibility, only reserving matters of exceptional importance for the opinion of a colleague or the decision of the assembled Council. These bureaux, or secretariats, in 1882, comprise the military, financial, home, revenue, agricultural, and commerce.

The particular branch of administration which Lord Canning and succeeding Viceroys reserved for their own special charge, is the Foreign Office, the duties of which relate to all chiefs and princes in India, and all neighbouring foreign princes beyond the limits. With such nations as Persia and China, where there is a diplomatic representative of the British Government, the Governor-General acts in concert with the British Government.

Under the constabulary system introduced by Act 5 of 1861, each district has a superintendent of police, and the districts are grouped for police purposes into circles, under deputy inspectors-general, while the whole police force of each province is under an inspector-general. The constabulary, except on the North-Eastern and Trans-Indus frontiers, is a purely civil force, organized on the Irish system, and subject in all respects, except internal discipline, to the civil authorities, that is, to commissioners of divisions and deputy-commissioners, or collector-magistrates of districts. The districts are approximately as under:—

Provinces.	Square Miles.	Population.	No.
Bengal, . . .	155,997	68,829,920	44
Assam, . . .	45,303	4,815,157	13
N.W. Provinces, . . .	81,748	32,699,436	37
Panjab, . . .	107,010	22,647,542	32
Oudh, . . .	24,213	11,407,625	12
Central Provinces, . . .	84,208	11,505,149	19
Bombay and Sind, . . .	126,445	23,325,053	24
Berar, . . .	17,711	2,670,982	6
Coorg, . . .	1,572	178,283	6
Madras, . . .	140,333	30,839,181	21
British Burma, . . .	87,220	3,707,646	19
Ajmir and Mairwara, . . .	2,711	453,875	1
Total, . . .	902,500	217,266,248	234

In 1880-81, the Administration cost in India, £1,291,483, which included the salaries of the Governor-General, Governors, Councillors, Secretaries, Political Officers, and Revenue Boards.

The more eminent of the presidents of the Board of Control were, Viscount Castlereagh, the Earl of Minto, Robert Dundas, afterwards Lord Melville, George Canning, Earl of Ellenborough, Charles Grant, Sir John Cam Hobhouse, and Sir Charles Wood, afterwards Lord Halifax.

The famed amongst Governors and Governors-General have been, Warren Hastings, Lord Clive, Earl Cornwallis, Marquis Wellesley, Marquis of Hastings, John Adam, Lord William Bentinck, Sir Charles (Lord) Metcalfe, Marquis of Dalhousie, Earl Canning, and Sir John (Lord) Lawrence.

Of the financial members of the Government of India may be named, James Wilson, Samuel Laing, W. N. Massey, and Sir Richard Temple.

The presidents of mark in the Council of the Government of Fort St. George, were Lord Macartney (1781); Major-General Medows (1788 and 1790) at Bombay and Madras; Lieutenant-General Harris (1798); Lord Bentinck (1803); and Major-General Sir Thomas Munro (1820). Bombay has seen Mount Stuart Elphinstone (1819), Sir John

Malcolm (1827), Sir George Clarke, and Lord Elphinstone (1856). Robert Lord Clive (1758 and 1765) distinguished himself alike as a soldier and in civil administration as Governor of Bengal; and since 1854, when Bengal was put under a Lieutenant-Governor, the most eminent have been, Sir George Campbell (1871), Sir Richard Temple (1874), and Sir Ashley Eden (1877-1882).

There were six Lieutenant-Governors of the Panjab in the nineteen years 1859 to 1877, amongst them Sir John (Lord) Lawrence and Sir Robert Montgomery (1859-1865). Between 1856 and 1876 there were seventeen Chief Commissioners of Oudh; and the distinguished Sir James Outram, Sir Henry M. Lawrence, Mr. (Sir) Charles Wingfield, and Mr. (Sir) William Muir were amongst the number.

In the Central Provinces there were thirteen Chief Commissioners in eleven years, 1861-1872.

Amongst others of the officers who distinguished themselves in civil and political administration, may be named Sir Bartle Frere in Sind, Sir John Peter Grant, Sir Henry Pottinger in Sind and China, Sir Charles Edward Trevelyan, Sir Arthur Phayre in Burma, Sir George Balfour in the military finance and controul departments.

The appointments of governors, bishops, commanders-in-chief, judges, filled up by the British ministers, were highly paid, the Governor-General's salary being £25,000 annually, but did not carry any pension. It was customary, however, when pre-eminent services had been rendered, for the Directors to reward them in that manner. Amongst civilians who were thus honoured, may be named Warren Hastings, Marquis Wellesley, Marquis Dalhousie; and the following military officers had special pensions for distinguished Indian services:—

Nott, Sir William, G.C.B.,	£1000
Hardinge, Lt.-Gen. Viscount, G.C.B.,	5000
Gough, Lord, G.C.B.,	2000
Pollock, Major-Gen. Sir George, G.C.B.,	1000
Wilson, Major-Gen. Sir Archibald, Bart., K.C.B.,	1000
Campbell, Sir Colin, Lord Clyde,	2000
Outram, Major-Gen. Sir James, Bart., G.C.B.,	1000
Stewart, Gen. Sir Donald, G.C.B., C.I.E.,	1000
Roberts, Major-Gen. Sir F. Sleigh, G.C.B., V.C., C.I.E.,	1000

The East India Company was uniformly just and liberal-handed to its servants. The action of the British nation towards them has been fitful and uncertain. Lord Clive served the East India Company from 1744. He laid the territorial foundations of the British Indian empire, and returned to Britain in 1767. At first he was well received, but he was subsequently impeached before Parliament, and only escaped trial by his death in November 1774. Warren Hastings' service extended from 1750 till his final return to Britain in 1785. He, too, was well received by the King and Queen; but he, too, was impeached by Messrs. Burke, Fox, and Sheridan for alleged acts of oppression. The trial went on for seven years, and he was acquitted in February 1788. He lived till 1818. Shortly before his death he entered the House of Parliament to give evidence, and all the members rose from their seats to do honour to the aged man. Lord Clive had laid the territorial foundations of the British Indian empire in Bengal. Warren Hastings was the

administrative organizer of the dominion, re-organized the Indian service, reformed every branch of the revenue collections, and created courts of justice. The Court of Directors allowed him £4000 a-year.

Army.—The native rulers who preceded the British, and all the existing chieftaincies, have had strongholds on which they placed reliance; and Clive's defence of Arcot, the Bhartpur resistance to Lord Lake, the Gurkha mountain campaign, Mulraj in his hold of Multan, all have indicated that the ways of the people are suitable for that mode of defensive warfare. The British, likewise, have formed fortresses at Calcutta, Madras, and Bombay; also strongholds at Delhi, Allahabad, and Secunderabad; and there are many dismantled forts in various parts of the country, all of which could be held against a sudden rush. But the British have hitherto largely trusted to their readiness to hold the open country. The composition and strength of the British Indian forces have, however, constantly been changed in organization and strength. From the first appearance of the British in India, their soldiers have consisted of European and native troops, the latter being wholly raised and maintained as a part of the Indian army. From 1754 till 1861, the European branch of the army of India has been composed partly of detachments of royal troops of Great Britain, and in part of Europeans specially raised for service in India as a part of the Indian army, both arms being maintained out of the revenues of India.

In 1755 the first British regiment, the 39th Foot, reached India. In 1794 the Indian armies numbered 70,000, including 13,500 Europeans. In 1808, at the end of the Marhatta war, Bengal and Madras had each 64,000, and Bombay 26,500; total, 154,500 soldiers. In 1844 there were 235,446 native soldiers. In 1857 a mutiny occurred of almost all the Bengal native army. At its outbreak, in May of that year, there were in India, as a nominal establishment—European soldiers, 45,000 of all ranks; sepoys, 244,000; semi-military police, 80,000. About 250,000 native troops arrayed themselves against the 45,000 British and about 60,000 native soldiery who stood firm. It was a contest for supremacy, and it was severe; but before the end of the year a Sikh army from the Panjab had increased the reliable native forces to 150,000, before July 1858 the British soldiers had been increased to 80,000 of all arms, and before the middle of 1859 India was re-won. After that revolt the established strength was made to stand at about 66,000 Europeans and 120,000 natives of all ranks; and the year 1879-80 saw the respective numbers at 64,520 and 124,978.

Artillery,	12,232	Europ.	902	Nat.
Cavalry,	4,429	"	13,548	"
Infantry,	47,519	"	102,283	"
Engineers and Sappers,	349	"	3,245	"

The armies of the princes and chiefs of India have always far exceeded those of the British, their numbers being about 300,000, fairly drilled and fairly disciplined.

The table given in the London Times of 29th July 1879 shows the strength of the forces kept up by the various princes of India, with the population and revenue of the states furnishing these contingents, viz.:—

BRITISH INDIA.

RAJPUTANA.					
States.	Population.	Revenue.	Cavalry.	Infr.	Guns.
Udaipur, . .	1,161,400	£400,000	6,240	15,100	538
Jey pore, . .	1,900,000	360,000	3,530	10,500	312
Jodhpur, . .	1,783,600	175,000	5,600	4,000	220
Rundi, . . .	220,000	50,000	200	2,000	68
Kotah, . . .	433,000	250,000	700	4,600	119
Tonk,	182,000	80,000	430	2,288	53
Jhalawar, .	220,000	145,000	400	3,500	90
Karauli, . .	188,000	30,000	400	3,200	40
Kishengarh, .	70,000	60,000	150	2,000	35
Dholpore, .	500,000	60,000	610	3,650	32
Bharatpur, .	650,000	210,000	1,460	8,500	38
Alwar, . . .	1,000,000	160,000	2,280	5,633	351
Bikanir, . .	539,000	60,000	670	940	53
Jaisalmir, .	73,700	50,000	500	400	12
Sirohi, . . .	55,000	80,900	375	350	...
Dongarpore, .	100,000	75,000	57	632	4
Banswara, .	150,000	300,000	60	500	3
Partabgarh, .	150,000	26,240	275	950	12

WESTERN INDIA.					
Baroda, . .	1,710,400	600,000	3,098	11,000	30
Kolhapur, .	546,156	100,000	154	1,502	258
Kechh, . .	409,522	150,000	300	600	38
Kathiyawar, .	1,475,685	1,000,000	3,033	15,306	508

CENTRAL INDIA.					
Gwalior, . .	2,500,000	931,000	6,058	16,050	210
Indore, . . .	578,000	300,000	3,000	5,500	102
Bhopal, . . .	663,658	137,625	1,194	4,766	39
Dhar,	125,000	43,700	370	790	4
Dewar, . . .	25,000	42,500			
Rewa,	1,280,000	225,000	905	2,000	33
Minor States,	435,000	265,000	2,677	22,163	42

SOUTHERN INDIA.					
Hyderabad,	10,666,800	2,000,000	8,202	36,890	72
Mysore, . .	5,055,412	1,082,000	35	1,000	6
Travancore,	1,262,647	428,500	60	1,211	0
Cochin, . .	400,000	105,749	...	300	3

CIS-SUTLEJ STATES.					
Pattiala, . .	1,586,000	300,000	3,191	7,185	14,100
Jhind, . . .	311,000	400,000			
Nabha, . . .	276,000	400,000			
Kalsia, . . .	62,000	13,000			
Malair Kotla,	462,000	10,000			
Faridkot, . .	51,000	7,500	300	3,275	2,000
Kashmir, . .	1,500,000	65,000			
Bahawulpur,	365,000	30,000			
Kapurthala, .	212,721	57,700			
Mandi, . . .	139,259	30,000			
Chamba, . . .	120,000	12,000			
Sakit,	44,552	8,000			
Minor Chiefs,	2,445,492	857,200	4,000	18,000	30,000

Total,	44,082,002	12,173,614	64,172	241,063	5252
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In addition to the troops which the princes and chiefs retain for their own purposes, several of them subsidize parts of the British Indian army; and, in the year 1880-81, their tribute, chouth, contributions for the pay of local corps and succession fees amounted to £742,209.

It has been suggested that the troops of the princes should consist of their own subjects, restricted to the number required for their own territories, and that they should be kept at the highest state of discipline, and well armed, so as to be able to hold their own dominions against any foreign aggression, whilst the British attended to the general defence of India. Of the 7428 strength of the Hyderabad Contingent, more than half have been recruited in Hindustan. Nearly all the men in the Bhopal regiments belong to British territories; and recruits for the Nair Brigade are obtained from Tanjore, Madura, and Tinnevely.

In 1882, the native non-commissioned officers, drummers, buglers, rank and file, serving in the British Indian army, had been drawn from the following provinces:—

BENGAL Sappers and Miners, Artillery, Cavalry, and Infantry.			
N. W. Frontier, beyond British territory,	793		
" within " "	1,560		
Derajat,	613		
Panjab proper and Hazara,	15,516		
Cis-Sutlej, including Independent States,	4,696		
Dehli territories,	4,241		
N. W. Provinces, including Rohilkhand,	6,429		
Oudh,	9,104		
Nepal,	4,836		
Central Provinces,	648		
Lower " "	1,601		
Assam,	366		
Other countries,	16	50,419	

MADRAS Sappers and Miners, Cavalry, and Infantry.			
Northern Circars,	11,977		
Central Carnatic,	8,690		
Southern „	2,780		
Bara Mahal, „	860		
Ceded Districts,	1,857		
Mysore,	1,890		
Tanjore, Madura, Tinnevely,	2,145		
Other countries,	961	31,150	

NAIR BRIGADE, Tanjore, Madura, and Tinnevelly, 1,434

MYSORE TROOPS, from Mysore (2462), Northern Circars (278), Ceded Districts, Carnatic, and Bara Mahal,	2,912
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BOMBAY Sappers and Miners, Artillery, Cavalry, and Infantry.		
N.W. Frontier, beyond British territory,	207	
" " " " " "	245	
Derajat,	95	
Punjab proper and Hazara,	2,230	
Cis-Sutlej, including Independent States,	14	
Dehli territories,	1,107	
N.W. Provinces, including Rohilkhand,	1,001	
Oudh,	1,915	
Nepal,	2	
Central Provinces,	419	
Lower Provinces,	124	
Assam,	12	
Konkan,	10,662	
Dekhan,	6,155	
Gujerat,	657	
Sind,	792	
Other countries,	14	25,651

HYDERABAD CONTINGENT, Artillery, Cavalry, and Infantry.		
N. W. Provinces beyond British territory,	9	
" within	3	
Panjab proper and Hazara,	255	
Dehli territories,	383	
N. W. Provinces and Rohilkhand,	911	
Oudh,	2,244	
Central Provinces,	58	
Lower Provinces,	16	
Dekhan,	3,414	
Other countries,	203	7,496

PANJAB FRONTIER FORCE, Artillery, Cavalry, and Infantry.		
N. W. Frontier beyond British territory,	705	
" within "	1,615	
Derajat,	93	
Panjab proper and Hazara,	7,875	
Cis-Sutlej, including Independent States,	1,460	
Dehli territories,	578	
N. W. Provinces, including Rohilkhand,	146	
Oudh,	434	
Nepal,	853	
Central Provinces,	158	
Lower Provinces,	40	13,957

BHOPAL BATTALION.	
Derajat,	4
Panjab proper,	16
Gia-Butlej, including Independent States,	159
Dehli territories,	4
N.W. Provinces,	250
Oudh,	425
Central Provinces,	42
Lower Provinces,	2

CENTRAL INDIA HORSE.

N.W. Frontier beyond British territory,	24
„ and Trans-Indus within „	22
Derajat, „	3
Panjab proper and Hazara, „	244
Cis Sutlej, including Independent States,	69
Dehli territories, „	402
N.W. Provinces and Rohilkhand, „	48
Oudh, „	38
Central Provinces, „	156
Other countries, „	1
MALWA BHIL Corps, „	535
MEWAR BHIL Corps, „	699
ERINPURA Irregular Force, Panjab, Dehli, N.W.	
Provinces, Oudh, „	856
DEOLEE, „	857
MHAIRWARA Battalion, „	849

138,285

Wars.—The Natives of British India have hitherto been largely employed in the British Indian armies, because they have been considered equal to any troops that could be brought against them, and because of their comparative cheapness, being healthier, and receiving smaller pay. The following are the annual costs of an artillery, cavalry, and infantry soldier of the native army:—

	Artillery.	Cavalry.	Infantry.
Bengal, „	Rs. 401 13 9	Rs. 155 1 11	
Madras, „	512 10 0 ²	173 14 5 ⁴	
Bombay, „	Rs. 166 5 8	473 13 5 ³	184 7 4 ⁴
Panjab, „	169 5 4 ¹	397 6 6	141 2 6
Hyderabad Con- tingent, „	158 14 11	476 14 5	162 5 7
Central India, Rajputana Agency, „	„	371 13 1	137 2 8
	„	385 10 10	140 9 2
Average yearly, „	Rs. 164 13 11	Rs. 440 0 3	Rs. 156 6 4
Monthly, „	13 11 9	36 10 3	13 0 6

¹ Huts provided by the State.² Clothing, accoutrements, hutting, horses, provided by the State.³ Good conduct pay, good shooting, not allowed to Bombay Native Cavalry.⁴ Do. including rations at Aden and Burma.

The military charges vary with the conditions of peace or war, but the following table of military expenditure of the three years before the mutiny and of the latest available years, will show the gross military charges during peace and war:—

	In India.	At Home.	Total.	
	£	£	£	
1864-65,	9,501,408	1,559,821	11,261,229	Peace.
1865-66,	10,019,436	1,672,757	11,492,193	
1866-67,	11,013,121	1,770,038	12,783,159	
1867-68,	15,569,926	1,165,958	16,735,883	Mutiny.
1868-69,	21,080,946	4,368,856	25,449,804	
1869-70,	20,000,307	2,730,994	22,640,301	
1874-75,	11,757,381	4,017,778	15,375,159	Peace.
1876-76,	11,725,204	3,583,196	15,308,400	
1877-77,	11,847,191	3,944,921	15,792,112	
1877-78,	12,358,511	4,281,250	16,339,761	Preparing for War.
1878-79,	15,109,553	3,982,935	17,092,488	
1879-80,	17,423,938	4,288,924	21,712,862	
1880-81,	23,911,394	4,174,808	28,086,202	War.
1881-82,	14,644,800	4,085,100	18,730,000	

Difficulties are experienced in separating ordinary and war expenditure, but the total cost of the Afghan war of 1879-82 has been estimated at £21,611,000, namely, £17,551,000 for military operations, and £4,060,000 for frontier railways.

In their wars the East India Company had been almost continuously successful. A reverse was sustained by a brigade in Afghanistan in 1842, and many thousand soldiers and followers perished in retreat. But the most severe trial occurred in

1857 and 1858, in which years the Bengal native army revolted, and many of the Hindu and Mahomedan races rebelled. Much has been put forward as to the cause of that disaffection. In the beginning of 1857 the number of British soldiers had fallen very low. The British regiments withdrawn from India for the operations against Russia had not been replaced in India, and the recruits to maintain the full strength of the regiments remaining in India had not been supplied, and it has been supposed that the disaffected soldiery of the Bengal army took that opportunity to revolt; but a general impression has been that it had its suggestion in the losses during the Afghanistan and Panjab wars, though doubtless a great change had been effected in the temper of a naturally arrogant oriental race, who respect, almost worship, might, by introducing amongst them rules and regulations suitable only for an army drawn from nations advanced in civilisation.

The contest for supremacy was severe and long continued. In May 1857 there were on the establishment in India—European soldiers, 45,000 of all ranks, furnishing about 36,000 rank and file; native army, 244,000; semi-military police, 80,000; and about 250,000 sepoy arrayed themselves against 45,000 Europeans and about 60,000 reliable native soldiery. The latter, before the end of 1857, were increased to about 150,000, by the addition of a Sikh army from the Panjab, and before July 1858 there were over 80,000 British soldiers in India. The successive features of the revolt and re-establishment of authority were as under:—

Revolt commenced at Barrackpur by the 19th Ben. N.L., 26th Feb. 1857.

Outbreak of the native cavalry at Meerut, 10th May 1857.

Dehli massacre occurred 11th May 1857.

At Ghazi-ud-Din Nuggur the mutineers were defeated on the 30th May 1857.

The Shahjahanpur massacre occurred 31st May 1857. 5th June 1857—Mutiny at Jhansi; on the 8th the massacre occurred.

Massacre at Cawnpur of the Futtchghur fugitives, 12th June 1857.

Massacre at Gwalior occurred 14th June 1857.

Massacre of the British at Cawnpur by Nana Rao, 27th June 1857.

Massacre at Cawnpur, 15th July 1857, by Nana Rao, of British women and children, 20th August 1857—Dehli recaptured.

Lucknow entered 25th August 1857, by Generals Havelock and Outram.

Dehli assaulted 14th Sept. 1857.

Lucknow relieved by General Havelock, 25th Sept. 1857.

The second relief of Lucknow effected by Sir Colin Campbell, 17th Nov. 1857.

Cawnpur relieved by Sir Colin Campbell, 28th Nov. 1857, and the Gwalior Contingent routed.

The battle of Nawabganj in Oudh, 14th June 1858.

Gwalior recaptured by Sir Hugh Rose, 28th June 1858.

10th April 1861—The Indian and British-European armies were amalgamated, and the native armies reorganised.

Since the suppression of the mutiny, the relative proportions of the European and native troops have been changed. The European and native forces in India were as under in the years—

	Europeans.	Natives.	Europeans.	Natives.
1839-40,	35,604	199,839	1858-59,	106,290
1842-43,	46,726	220,947	1865-66,	73,362
1856-57,	45,522	232,224	1881-82,	66,006
				125,894

BRITISH INDIA.

In 1857 there were on the establishment, or authorized strength, 6944 European and 8963 native artillery; 3186 European and 30,473 native cavalry. But since the revolt of the native army, the policy has been to augment the European arm, remove all native soldiers from the scientific corps, and reduce their numbers.

The composition and establishment of the Indian army in 1857, 1865, 1879-80, and 1881-82, were as under:—

	1857.		1865.		1879-80.		1881-82.	
	Eur.	Na.	Eur.	Na.	Eur.	Na.	Eur.	Na.
Art.	8,944	8,963	13,672	1,465	12,232	902	11,141	1,943
Cav.	8,136	30,473	6,274	14,674	4,420	18,548	4,633	16,739
Inf.	33,234	185,047	48,945	99,353	47,519	102,283	46,866	94,256
Staff.	H. & C.	1,406	..	..	..	..	1,404	..
Engin.	eers & Saps.	438	2,853	349	5,245	549	5,019	..
Inval.	Vets., Wrnt.	1,145	..	..	..	..	136	..
Total.	43,384	224,483	71,880	118,345	64,520	124,978	64,728	115,957

In 1796 the formation was tried of double battalions, and this continued till the early part of the 19th century.

In 1882 four cavalry and eighteen infantry regiments were reduced, and, excluding local corps, the establishment was fixed at 31 cavalry and 113 infantry regiments, with eight European officers to 550 natives of all ranks in the cavalry, and to 822 natives in the infantry.

Revenue.—Up to the year 1856 the increase of territory had been so continuous, that any comparing of the revenue, expenditure, and debt, of preceding with those of subsequent years, would be uninteresting, except as a matter of history. Since 1792-93, the Carnatic, the Ceded Districts, most of the Dekhan territory ruled over by the Peshwas, the greater part of the North-West Provinces, all the Panjab and Sind, the Central Provinces, part of Burma, Assam, Tenasserim, Orissa, Oudh, Satara, and other parts, have been added to British territory; and even since 1849, when the Panjab was closed, about a hundred thousand square miles of territory have fallen to the paramount power, with a population of over seventeen millions.

It may, however, be interesting from a historical point of view, to contrast the conditions of 1792-3, 1868-9, and 1881-2.

Year.	Gross Revenue.	Gross Charges.
1792-3.	£8,225,628	£6,940,833
1868-9.	51,657,658	54,431,688
1881-2.	70,981,000	74,999,000

The following have been the amounts of revenues, charges, and debt since 1839-40:—

Year.	Total Receipts.	Total Charges in India & England.	Debt. Millions.
1839-40	£20,124,038	£22,228,011	29
1845-46	24,270,608	25,662,738	38
1849-50	27,522,344	26,960,988	45
1855-56	30,817,528	31,637,530	50
1858-59	..	..	..
1859-60	39,705,822	51,861,720	89
1860-61	..	..	94
1861-62	43,829,472	43,880,100	..
1862-63	45,143,752	45,143,752	96
1863-64	44,613,032	44,613,032	90
1864-65	45,652,897	45,846,418	90
1865-66	48,935,220	48,935,220	90
'66-7 (11 mo.)	42,122,433	44,639,924	93
1867-68	48,534,412	50,144,669	95
1868-69	49,262,691	53,407,334	96
1869-70	50,901,081	53,382,026	101

BRITISH INDIA.

Amounts of revenues, charges, and debt since 1839-40, continued—

Year.	Total Receipts.	Total Charges in India & England.	Debt. Millions.
1870-71	£51,413,686	£49,930,696	104
1871-72	50,110,215	46,986,038	106
1872-73	50,219,489	48,453,817	105
1873-74	49,598,253	51,405,921	107
1874-75	50,570,171	50,250,974	118
1875-76	51,310,063	49,641,118	122
1876-77	55,995,785	58,178,563	127
1877-78	58,969,301	62,512,388	134
1878-79	65,199,602	63,165,356	137
1879-80	68,484,666	69,667,615	153
1880-81	..	..	157

The following will show that there have been great alterations in the Home Charges, owing to financial operations and changes in the rate of exchange:—

Year.	In India.	In Britain.	Year.	In India.	In Britain.
1839-40.	£19,649,045	£2,578,966	1869-70.	£42,791,013	£10,581,013
1845-46.	22,018,671	3,044,067	1875-76.	44,008,789	9,902,968
1849-50.	24,210,051	2,750,937	1879-80.	58,108,249	24,654,658
1855-56.	28,372,901	3,264,629	1880-81.	66,331,500	14,991,577
1859-60.	44,622,269	7,239,451	1881-82.	58,573,400	16,420,600
1865-66.	41,120,924	5,043,228			

Land Tenure.—During all ages, the rulers of India have regarded the land as the property of the state, and the bulk of the public revenues has ever been obtained from it. In 1856 it furnished more than one-half of the total revenues of the East India Company. In 1864-65, during which other taxes were levied, out of a total of £45,652,897, the large revenue of £20,087,728 was obtained from the land. In 1878-79, when the ordinary revenue amounted to £58,624,372, that from the land was £22,830,586. During the 18 years ending 1878-79, the ordinary revenue has been increasing, other branches of revenue having improved faster than that of the land. In that period the land ranged between £19,570,147 in 1862-63 and £22,330,586 in 1878-79, but the total revenue ranged between £43,829,472 in 1861-62 and £58,624,372 in 1878-79.

There are three great forms of tenure on which the land is held, viz. the zamindari, the pattadari, and the ryotwari. The last-named prevails in Madras and Bombay, but in the North-West Provinces and in the Saugor and Nerbadda territories, the zamindari and pattadari tenures exist co-extensively. In Madras and Bombay, therefore, there is a joint ownership of the ryot cultivator and the Government.

Under native rulers, a fixed proportion of the gross produce was taken; but the British Indian Government deals with the surplus or net produce which the estate may yield after deducting the expenses of cultivation; and the directions to the revenue settlement officers provide that at least one-third of this net produce shall always be left to the cultivator as his profit. The native powers usually took at least a half of the produce, and not infrequently more; the British rulers have reduced the charge to an average of about 5 per cent.

The late James Mill, writing on this part of the revenue, remarked: 'As far as this source goes, the people of the country remain untaxed. The wants of Government are supplied without any drain either upon the produce of any man's labour or the produce of any man's capital.' Except the British, under the administrations of Lord Cornwallis and Lord Canning, during whose governments were introduced systems of permanent

settlements of portions of the country and a right to purchase free holdings, every dynasty has kept this source of revenue intact. Grants of the royalties of the lands, in the form of jaghir, were usual; but the joint-proprietorship in the soil has remained in the hands of the communities and descendants of the individuals who cleared it a thousand years ago. Although Mahomedan dynasties have been ruling large portions of India for a thousand years, Mahomedans of Arab, Turk, or Moghul descent, have few lands. Converts to Mahomedanism from Indian races, and Pathan, Brahui, and Baluch tribes, retain their proprietary customs.

In Bengal, in 1793, Lord Cornwallis made a permanent settlement with zamindars, a class of middlemen whom he found collecting land revenues, by which these pay direct to Government a sum equal to a little more than one-half what they receive as rent. By that measure Government ceased to have any direct participation in the agricultural improvement of that part of the country. Statesmen have deemed that arrangement a grave error, which has lost to the State several millions of revenue yearly; and there is now much show of reason in the contention that the landowners might reasonably be called to contribute more largely than at present to the expenses of the State. The land is a source of revenue on which the State can, in all circumstances, confidently rely, and than which none is more easily collected or more willingly paid; and the most recent orders permit a redemption only for the land needed for dwelling-houses, factories, gardens, plantations, and similar restricted purposes.

About 1839, a thirty years' lease was made in the N.W. Provinces, and this has been followed in the Panjab. It is estimated that in this mode the assessment was about two-thirds of the surplus, after deducting the expenses of cultivation, profits of stock, and wages of labour; and in the revised settlements it was reduced to one-half the yearly value.

In the Madras Presidency the zamindari tenure exists in a few localities, but principally in the Northern Circars, since the settlement of 1802. Another system, that of village-renters, is in operation, in which the villagers stand in the place of the zamindar. In the Madras ryotwar system, the Government, as the joint landlord, treats direct with the holder, who is recognised as the proprietor so long as he pays the regulated assessment. He can sub-let, sell, transfer, or mortgage it. The assessment is fixed in money, and does not vary from year to year, unless when water is obtained from a Government source of irrigation. An annual settlement is made, not to reassess the land, but to determine upon how much of his holding the ryot shall pay.

In Bombay the ryotwar system prevails, but the assessment is open to revision every 30 years.

	Acres Assessed.		Incidence per Acre
	1850.	1875-76.	
Madras,	9,750,000	20,000,000	On dry land
Bombay,	12,500,000	20,300,000	4½d. and on irrigated land 5s.

Where the occupants hold directly of the State, as in the Bombay and Madras Presidencies and parts of Upper India, the tenure is secure: tenants' improvements cannot be made the ground of enhancement, and the tenant can surrender

the whole or any part of his holding at pleasure. Where, however, as in Bengal and the North-Western Provinces, a landlord class intervenes between the Government and the occupant of the soil, great uncertainty as to the tenants' rights prevails, and gross oppression is frequently practised. The attention of the Indian Government has been long directed to the subject. But though there are certainly not less than six million peasants in Bengal with small holdings, their troubles and grievances are borne with unbroken silence and in unquestioning submission to the law.

The North-Western Provinces and the Panjab have practically one land system. In that part of India, the village community has preserved its integrity more completely than elsewhere. Government therefore recognises the village, and not the zamindar's estate or the ryot's field.

Oudh, the Indian province most recently acquired, has a peculiar land system, arising out of its local history. The Oudh talukdars resemble English landlords more closely even than do the zamindars of Bengal.

How to provide revenue for legitimate State expenditure is a constant subject of thought to the rulers. The poverty of India makes it a country in which it is a matter of extreme difficulty to raise the necessary revenue. New taxes are not easily found, and they are accepted with great unwillingness. The country needs opening up by roads, railroads, and navigation canals; improvements of rivers and of channels, education and sanitation, are urgently needed; and to accomplish these, money has been obtained by loans. Up till the years of the mutiny, the public debt was usually about eighteen or twenty months of the amount of the gross revenue. Since the mutiny, the debt has been equal to twenty-five or twenty-six months' revenue:—

Year.	Gross Rev.	Debt.	Year.	Gross Rev.	Debt.
	£	£		£	£
1812-13,	16,886,290	30,313,311	1871-72,	50,110,215	106,981,569
1820-21,	21,352,241	33,010,651	1872-73,	50,219,459	105,470,986
1830-31,	22,019,310	36,880,147	1873-74,	49,698,253	107,534,903
1840-41,	20,851,073	31,233,496	1874-75,	50,570,171	118,446,992
1850-51,	27,625,360	49,319,347	1875-76,	51,310,063	122,570,014
1860-61,	42,728,601	93,036,688	1876-77,	55,995,185	127,320,169
1867-68,	48,053,178	94,055,358	1877-78,	58,909,301	134,631,553
1868-69,	48,531,763	93,583,155	1878-79,	65,199,602	137,868,043
1869-70,	50,901,081	..	1879-80,	68,484,666	151,728,065
Excl. outlay on product, works,			1880-81,	72,559,978	..
1870-71,	51,413,680	104,437,274			

Of the amount raised for revenue, 24 millions in no sense represent taxation, being derived partly from opium, partly from the earnings of public works, and the rest from the gross receipts of departments, such as the post-office, which are on the whole an expense to the state. It in no case exceeds 7½ per cent. of the value of the gross produce; in Madras it is little over 6 per cent., and in the Panjab 5·6 per cent.; while in Bengal and the Central Provinces it sinks to less than 4 per cent. The other items of taxation bring up the total incidence to 4s. per head of the population. Dividing it into classes, and apportioning each tax among the classes who pay it, it may be said generally that the landed class pay, including land revenue, 5s. 6d. per head; the labourers pay 7d. per head on salt, or, assuming a family of three persons, 1s. 9d., equivalent to about four days' wages of a man and his wife. Artisans contribute 2s. apiece, or say the earnings of five working days; traders, 3s. 6d.

In 1878-79 the total gross revenue was £58,624,379.

Land revenue,	£22,330,586
Tributes and contributions from Native States,	703,660
Forest timber and products, also sawn, and miscellaneous,	605,433
Opium,	9,399,401
Services of law,	1,091,734
" telegraph,	426,694
" post-office,	911,806
" railways,	10,822
Public works,	571,076
Canals, irrigation,	168,619
Other sources,	22,404,548

About £19,000,000 was raised by taxation, viz.:

Capitation tax in Burma,	£
Assessed taxes,	900,920
Customs,	2,326,561
Excise on spirits and drugs,	2,619,349
Provincial rates,	2,638,835
Stamps (judicial),	3,110,540
Salt,	6,941,120

In that year the total incidence of taxation on the 200,000,000 of population was under 2s. per head; adding the land revenue, the total burden was about 4s. per head.

The salt revenue is entirely an impost of the British Indian Government, and the quantities and the duties were as under:—

Year.	Quantity.	Duty.	Year.	Quantity.	Duty.
	Maunds.	Rs.		Maunds.	Rs.
1868-69,	22,793,359	5,46,40,640	1875-76,	25,742,236	5,88,99,582
1869-70,	22,646,384	5,71,50,030	1876-77,	25,457,359	5,99,44,050
1870-71,	22,030,790	5,92,98,280	1877-78,	24,715,214	6,20,10,253
1871-72,	22,783,285	5,73,50,160	1878-79,	25,436,794	6,52,45,882
1872-73,	23,673,348	5,91,69,526	1879-80,	27,818,743	6,92,48,600
1873-74,	23,564,703	5,88,87,027	1880-81,	27,240,489	6,73,50,664
1874-75,	23,972,620	5,91,96,694			

It is a tax which is recognised to press unequally on the means of the people, and there have been repeated modifications of it. In 1882-3, the salt duty was reduced to a uniform rate of Rs. 2 per maund everywhere except Burma and the Trans-Indus districts of the Panjab, where the existing lower rates are maintained. This involved a reduction of duty amounting to 30 per cent. in Bengal, and to 20 per cent. elsewhere. The loss of revenue was estimated at £1,423,000, but this has not been the result. The chief blot on Indian taxation is that it falls too heavily on the poor, and leaves many of the wealthy classes wholly untouched. A rich person, for instance, with a couple of millions in the funds, pays literally no taxation but an infinitesimal charge on the salt which his family consume.

The revenue from opium has been as under:—

Year.	Receipts.	Charges.	Year.	Receipts.	Charges.
	£	£		£	£
1861-62,	26,559,269	£1,449,465	1871-72,	29,259,859	£1,506,646
1862-63,	6,056,476	1,856,378	1872-73,	8,684,691	1,814,268
1863-64,	6,331,999	2,906,493	1873-74,	8,324,879	2,001,280
1864-65,	7,361,405	2,876,981	1874-75,	8,556,629	2,341,546
1865-66,	8,518,264	1,894,370	1875-76,	8,471,425	2,218,565
1866-67,	6,803,413	1,077,330	1876-77,	9,122,460	2,841,647
(11 mo.),			1877-78,	9,182,722	2,661,266
1867-68,	8,923,568	1,874,121	1878-79,	9,399,401	1,698,730
1868-69,	8,453,965	1,720,111	1879-80,	10,319,162	2,067,492
1869-70,	7,953,098	1,620,683	1880-81,	10,480,061	2,028,737
1870-71,	8,045,459	2,014,423			

The opium manufactured in British territory is a Government monopoly; but about an equal quantity is prepared in Native States, on which a heavy transit duty is levied. It produces a net sum of £6,000,000 to £7,000,000, which is raised without the smallest hardship, without the smallest suffering, without the smallest complaint from the people of India, and, indeed, is almost the only source of revenue which can be raised in

India without inflicting some hardship and causing a great deal of discontent. It has been regarded by many persons in Britain as differing from spirits and other drugs, but there is no difference between them.

Languages.—The languages of British India have been investigated by many of the learned of Europe, and a fairly continuous series of inscriptions on rocks, on pillars, and on copper plates, enable us to trace back the Indian alphabets to the 3d century B.C. The Asoka inscriptions, 250 B.C., were in two characters. The northern variety, or Ariano-Pali, is recognised to be of Phœnician origin; the southern variety, or Indo-Pali, is believed by some scholars to be of western origin, others holding it to be an independent Indian alphabet; and an attempt has been made by General Cunningham to trace its letters back to an indigenous system of hieroglyphics in prehistoric India.

Arabic is the only one of the Semitic tongues to any extent used, and even that only in the Koran, as the sacred book of the Mahomedans. Sanskrit is known to all the learned Brahmans of India, and is the language of their sacred texts. Neither Arabic nor Sanskrit is vernacular. But the Sanskritoid tongues, Hindi, Urdu, Bengali, Cutchi, Gujarati, Konkani, Mahratti, have many infused Arabic and Persian words, and the Urdu has grown out of the union of all of these. The Hindi abounds in Sanskrit words, and has many dialects. The tongues spoken in the whole of Upper India, including the Panjab, from the Himalayan to the Vindhyan range, may be said to be Hindi, as also the languages of Kannaon and Garhwal, all along the sub-Himalayan range as far as the Gogra river; the impure dialect of the Gurkhas, the Brij-bhasa (or Baka, as it is pronounced on the Ganges), the Panjabi, Multani, Sindi, Jataki, Herati, Marwari, and, it is said, Konkani. The Bengali is a form of Hindi, but so highly polished as to be classed as a distinct tongue; and Baluchi and Pushtu have relations with the Sanskritoid tongues. At the close of the census of 1871, it was estimated that 41 millions were speaking Bengali, 4 millions Urya, 2 millions Assamese, 60 millions Hindi, and 40 millions (40,882,537) Urdu. These and their dialects comprise the languages of the Aryan stock.

Dr. Hunter (Imp. Gaz.) supposes the languages of the non-Aryan races to indicate that the earlier occupants of India belonged to three great stocks, which he designates the Tibeto-Burman, Kolarian, and Dravidian. He says of the *Tibeto-Burman* tribes, that in some prehistoric time they had dwelt in Central Asia, side by side with the fathers of the Mongolians and the Chinese; that they crossed over the Himalaya into India by the north-eastern passes, but have continued to cling to the skirts of the Himalaya and their north-eastern spurs; and several of the hill languages in Eastern Bengal still preserve Chinese and Mongolian terms. The Tibeto-Burman tongues prevail southwards through the Eastern Peninsula, till they become intermixed with the Mon Anam, and with the Siamese or Tai group, and finally meet the Malay races in the extreme south of the Eastern Peninsula. The Tibeto-Burman tribes have but little amalgamated, some of them being still in a semi-savage state. The known languages and dialects in use amongst them are

above a hundred, and only a few of them are written tongues. The principal are the Aka, Burmese, Cachari or Bodo, Dhimal, Garo, Gurung, Kanawari dialects, Khyeng, Kuki dialects, Lepcha, Manipuri, Mikir, Miri, Mishmi dialects, Murini, Naga, Newar, Singpho, Tibetan or Bhuteah, Tipura or Mrung.

The *Kolarians*, another non-Aryan race, are scattered in the north-eastern parts of Central India, and in parts of its Western Peninsula. They also are supposed to have entered India through the north-east passes of the Himalaya. The Santal, the largest of the Kol tribes, dwell in the extreme eastern edge of the table-land, where it slopes down into the Gangetic valley; the Kurku, another Kolarian tribe, inhabit a patch of country about 400 miles to the west, and the Santal and Kurku dialects are almost the same. The Savara, once a great Kolarian nation, mentioned by Ptolemy, are now a broken tribe of woodcutters, dwelling in the forests of the northern part of the Eastern Ghats. Other tribes with dialects of the Kolarian group, are the Mundari, Ho or Larka Kol, the Blumij, the Korwa, Kharria, the Juang, the Kuri, the Kurku, and the Mehto. These mark distinct and isolated tribes, which have never within historic times held any large portion of the country.

The chief *Dravidian* languages are the Tamil, Telugu, Canarese, Malealam, and Tulu, with several uncultivated dialects of the Tamil and Canarese, viz.: Kudaga or Coorg, Toda, Badaga, Kota, several Gond dialects, also the Kandh or Ku, the Uraon or Dhangar, and Rajmahali or Maler, the Yerakala?, Korawa?, Yenadi, and other broken tribes.

Neither the time of the incoming of the Dravidian tribes nor the routes which they followed, are known. They now occupy much of the northern part and lowland of Ceylon; and nearly all the Western Peninsula, several of them in great nationalities. Mr. Hishop and Dr. Caldwell suppose that they entered India through the N.W. passes, and that some Dravidian and Kolarian tribes converged and crossed each other in Central India, ultimately taking up the positions which the Kol and the Gond hold in the mountainous tracts there, —the great bodies of the Dravidians, however, swerving to the south of the Peninsula, and into Ceylon. Forty-eight millions of people speak Dravidian tongues.

The census of 1871 showed the people speaking Telugu to be 11,610,000 souls in the Madras Presidency, besides whom the south-eastern portions of Hyderabad, westwards to Beder and Dangapur, have Telugu as their vernacular; and Teling colonies are in Mysore, about three millions more.

Tamil is spoken in the Madras Presidency by 14,715,000, with colonies in Ceylon and the Straits, and in all the large cantonments of Mysore and Hyderabad.

The Canarese-speaking people of the Madras Presidency number 1,699,000; but the southern portion of the Bombay Presidency, 2,101,931, and the S.W. part of the Hyderabad Dominions, and most of Mysore, are Canarese, and their total number may be 5½ millions. The Imp. Gazetteer says 9 millions; which seems an over-estimate.

Malealam is spoken by 2,324,000 in the Madras Presidency, and by about 1,902,533 in the Travancore State.

The Tuluva people are ceasing to speak Tulu, only 29,000 now using it, and 640,000 speak the Uriya and hill languages.

How languages and dialects become intermixed even at the present day, is shown by the variety of tongues spoken in the N.W. corner of the Peninsula, forming part of the Bombay Presidency. Mahratti is spoken there by 7,751,497 persons; Gujerati by 3,103,311; Canarese by 2,101,931; Sindi by 2,051,726; Hindustani by 871,421; Baluchi by 149,519; Marwari by 141,229; and Brahui by 24,520. Other eastern languages are represented by 5418 persons speaking Arabic, 634 Bengali, 65 Burmese, 310 Chinese, 26 Kashmiri, 26 Kurgi, 325 Malealam, 2052 Negro dialects, 13 Nepali, 23,966 Panjabi, 8498 Pushtu, 4230 Persian, 45,541 Goanese, 2 Singhalese, 2 Uriya, 7830 Tamil, 110,237 Telugu, 595 Tulu, and 203 Turkish. European languages are represented by 26,340 English, 2 Danes, 3 Dutch, 145 French, 322 Germans, 58 Greeks, 80 Italians, 24 Maltese, 4005 Portuguese.

Mr. E. L. Brandreth, in vol. x. of the Royal Asiatic Society's Journal for 1877, gives the following list of the Non-Aryan languages in India:—

DRAVIDIAN.		KOLARIAN.
Tamil.	Gond dialects, viz.:	Santali.
Tamil, schen.	{ Maha-Gaeti.	Mundari.
Malealam.	{ deo. Rutluk.	Ho or
Telugu.	{ Raj. Madi.	Larka Kol.
{ Canarese.	{ Maria.	Bhumij.
{ Badaga.	Khond or Ku.	Korwa.
Tulu.	Oraon or Dhan-	Kharria.
Kudaga or	gar.	Juang.
Coorg.	Rajmahal or	Kuri.
Toda.	Maler.	Kurku.
Kota.	Miscellaneous:	Mehto.
	Naikude. Yoru.	Savara.
	Kolami. I kala.	
	Keikadi. Gadaba.	
TIBETO-BURMAN.		
i. { Cachari or Bodo.	Dungmali, Khaling,	
{ Mech.	Kulungya, Lambich-	
{ Hojai.	hong, Lohorong,	
{ Garo.	Nach-chereng, Rodong,	
{ Pani Koch.	Rung-Chenbung, Sang-	
{ Deori Chutia.	pang, Thulungya,	
{ Tipura or Mrung.	Wa-ling, Yakha.	
ii. { Tibetan or Bhotia.	Limbu.	
{ Sarpa.	Sunwar.	
{ Ilopa or Bhutani.	Bramu.	
{ Changlo.	Chepang.	
{ Twang.	Yayu.	
iii. { Gurung.	Kusunda.	
{ Murni.	xi. Naga dialects.	
{ Thakaya.	Numang or Jaipuria.	
{ Newar.	{ Banpara or Joboka.	
{ Pahri.	{ Mithan or Muthun.	
{ Magar.	{ Tablung.	
iv. { Lepcha.	{ Mulung.	
v. { Dophla.	xiii. Naga dialects.	
{ Miri.	Khari.	
{ Abor.	Nongong.	
{ Bhotia or Lo.	Tengsa.	
vi. { Aka.	Lhoto.	
vii. { Mishmi dialects.	xiii. Naga dialects.	
{ Chulikata.	Angami.	
{ Taying or Digaru.	Bengma.	
{ Mijhu.	{ Arung.	
viii. { Dhimal.	{ Kutcha.	
ix. { Kanawari dialects.	Liyang or Koreng.	
{ Milchan.	Marām.	
{ Tiberakad or Bunan.	xiv. Mikir.	
{ Sumchu.	xv. Singpho or Ka Kyen-	
x. Kiranti, with 17 dialects,	Jil.	
viz. Bahingya, Bal-	xvi. Burmese; Mugh of	
ali, Chhingtangya,	Chittagong and	
Chourasya, Duini,	Rukhong of Arakan.	

xvii. Kuki dialects.

{ Thado.
 { Lushai.
 { Hallami.

Khyeng.
 Manipuri.
 { Maring.
 { Khoibu.

Arabic, Persian, and Urdu are written in modifications of the same character; Sanskrit, Hindi, Mahratti, similarly; but Gujerati, Bengali, Karnati or Canarese, Malealam, Tamil, Telugu, Tulu, and Uriya have each their own writing character; and since the early part of the 19th century, propositions have been made to substitute for them all the Roman printed and Italian cursive characters, but the suggestion has not been carried out. Sir Erskine Perry, about the middle of the century, successfully advocated the introduction of the Arabic numerals in the official documents of the Madras and Bombay Presidencies.

In summing up this part of the subject, it is necessary to mention that since the middle of the 19th century every educated native of India aspires to an acquaintance with the English; and the public examinations for scholastic and collegiate honours show a comparative neglect of their respective vernacular tongues.

Literature.—The literature of India has marked features. In the north, the Indo-Aryan or Sanskrit language and literature was developed by the Brahmans. To them the Hindus are indebted for their sacred Vedic books, with their Sanhitas, Brahmanas, Sutras, and Upanishads, and for the later Puranas. The Sanskrit writers produced works of great beauty in epic, dramatic, lyrical, and ethno-didactic poetry; from early times, the science of language, philosophy, and astronomy, were highly cultivated by them. Medicine seems to have been an independent development. They advanced the arts of music, painting, sculpture, and architecture. Law and religious worship received great attention; and six darsana or schools of philosophy grew up amongst them, and are still fully recognised.

During the 18th and 19th centuries, many of the learned of Europe and India engaged in the study of the Sanskrit writings; and Aufrecht, Ballantyne, Bhau-Daji, Buhler, Burnell, Burnouf, Colebrooke, Goldstücker, Haug, Kern, Lassen, Max Müller, Rajendra Lal, Roer, Roer, Roth, Schlegel, William Taylor, Weber, Westergaard, M. Williams, and H. H. Wilson have been prominent.

Until the middle of the 19th century, it was customary for Indian students of Sanskrit literature to commit the books to memory, and manuscripts older than the 11th century have not been found. The Vedic hymns detail the mythology and domestic customs of the East Aryans till their arrival in India. The Mahabharata, an epic by a Vyasa, describes a war between the Pandava and Kaurava branches of the Lunar race. Another epic, the Ramayana, by Valmiki, relates the exile of Rama, a Solar prince, and his expedition to the south to recover Sita, his wife, whom Ravana, a ruler of Ceylon, had carried off, and the recognition of his two sons, Kusa and Lava. The Puranas relate to modern Hinduism. The Vishnu Purana is supposed to have been written about A.D. 1045, and the date of the Bhagavat Purana is unsettled. Kalidasa, the author of the Raghuvansa, the Kumara Sambhawa, the Megha Duta, and Sakuntala, was the father of the erotic lyric. Jayadeva, author of the Gita Govinda; the astronomical works of Varaha Mihira, Brahmagupta,

and Brahmacharya; and the writings of the physicians Charaka and Susruta, also of Panini the grammarian, B.C. 800; and the stories of the Vrihat Katha and the drama of the Toy Cart, the Mrichchhakatika, and Nala and Damayanti, are known to all Europe. The Hindi vernacular, says Dr. Hunter, owes its development into a written language partly to the folk-songs of the peasantry and the war ballads of the Rajput court bards, but chiefly to the literary requirements of the Vaishnava faith. The three best known sets of their religious treatises are the voluminous works ascribed to Kabir (A.D. 1380–1400) and his followers, preserved in the Kabir Chaura at Benares; also the Granth, or scriptures of various Bhagats or Vaishnava religious founders, especially of Dudu in Rajputana, and of Nanak and succeeding gurus of the Sikhs; and the Bhaktamala, or ‘Garland of the Faithful,’ compiled by Nabaji about the fifteenth century, and popularized by Narayan Das (1627–58), Krishna Das (1713). The Prem Sagar, one of the Vaishnava sacred love songs, relating the loves of Radha and Krishna, is prized throughout all Northern India. Chand, the Hindu court bard of Prithwi Raja of Delhi (1193), wrote the Prithwi Rasan, a ballad chronicle, one of the earliest poems in Hindi.

But in the south of India the Tamil people, certainly from the earliest centuries of the Christian era, developed an independent literature. Some of their books, written by Pariahs, take a very high place in ethics, as the Tolkappayam; Kural of Tiruvalluvar, a Pariah; the five books of Auvaiyar, the Matron, also a Pariah; the Chintamani; and Nannul. The Rev. Dr. Bower says of Auvaiyar, ‘She sang like Sappho; yet not of love, but of virtue.’

The literature of foreign countries has also ever been largely available. Aryans, and Semites, and Turks, and Moghuls, brought with them the writings of their own nations, and, while dominant, contributed largely to the literature of the country. The Arab, Moghul, Turk, and Persian were decidedly literary. Timur wrote his Institutes; the autobiography of Baber was written in Chaghtai Turki; Akbar spoke and wrote in Turki; and up to comparatively recent times, the Turk and Persian formed two distinct, often opposing, parties at Delhi. Sir Henry Elliot and Mr. Dowson’s labours in writing a history of India, as told by its own historians, have made known many Arab authors. Persian, during the 18th and 19th centuries, was the court correspondence language of all Mahomedan and Hindu rulers; and since the latter years of the 18th century, the dominant British have given to India numerous works in English, and have made widely known the writings of preceding races. The scheme on which this Cyclopædia has been planned requires separate notices of the chief authors, and their names will therefore be found in their respective places, but Sir William Jones, Mountstuart Elphinstone, Sir Henry Pottinger, and Sir John Malcolm are recognised to have led the way to history and travels. The better known of the Asian writers have been as under:—

Abbas Khan, Sarwani.	Abu-l-Hasan.
Abdullah, Wassaf.	Abu-l-Kasim Hasan bin
Abd-ur-Rahim.	Ahmad, Ansari.
Abd-ur-Razaq.	Abu Rihan, al Biruni.
Abu-l-Fada.	Abu Talib.
Abu-l-Fazl.	Abu Zaid-ul-Hasan, Sirafi.

Agastiah (3 of this name).
 Ahmad Yadgar.
 Anara Sinha.
 Amin Raza.
 Amir Haidar Husaina.
 Amir Khusru.
 Amirta.
 Amirtasa.
 Ananda Bhima.
 Ananda Giri.
 Ananta.
 Angirasa.
 Apistambha.
 Arya Bhatta.
 Asoka Piyadasi.
 Atbi.
 Atri.
 Auviyar (3 of this name).
 Baber, Zahir ud Din Mahomed.
 Badarayayana.
 Bahadur Singh.
 Baihaki.
 Baizawi, Abu Saeed Abdullah.
 Bahar.
 Basava.
 Bedpai.
 Bharadwaja.
 Bharata.
 Bhava Buta.
 Bharavi.
 Bhartihari.
 Bhaskaracharya.
 Bhatta Narayana.
 Bhrgu.
 Biladuri, Ahmad - bin - Yahya.
 Brahmagupta.
 Budhayana.
 Buddhaghosha.
 Callaca.
 Casi Rao.
 Chaitanya.
 Chand.
 Charaka.
 Daksha.
 Darad.
 Dhanwantri.
 Devala.
 Dofu.
 Fakhr ud Din, Bina Kiti.
 Garga.
 Ghias ud Din Mahomed,
 Khondamir.
 Ghulam Ali Khan.
 Ghulam Husain Khan.
 Govinda.
 Hultiz, Khajah Shams-ud-Din.
 Haidar Mirza, Doghlat.
 Hamad Ullah, Mustaufi.
 Hari Charan Das.
 Harnam Singh.
 Harsukh Rai.
 Ibn Batuta.
 Ibn Haukal. [Kasim.
 Ibn Kurdadba, Abu - l - Ibrahim bin Hariri.
 Idrisi.
 Imayt Husain.
 Insba.
 Istakhri.
 Jahangir.
 Jaimini.
 Jamal - ud - Din Abd - ur - Razaq.
 Jamadagni.
 Jami, Nur ud Din Abd ur - Rahman.
 Janaka.
 Jatukarna.
 Jauhar.
 Jaya Deva.
 Jiva Goswami.

Joshash.
 Joannes Damascenus.
 Jugai Kishwar.
 Jurat.
 Juwaini.
 Jye Singh II.
 Kabir.
 Kalhana.
 Kalidasa.
 Kampani, author of Chin-tamini. ?
 Kanada.
 Kanva.
 Kapila.
 Kasyapa.
 Katayayana.
 Kazwini, Zakaria ibn-Mahomed.
 Kazi Ahmad.
 Khair ud Din Mahomed.
 Khakani.
 Khush'hal Chand.
 Kishn Dayal.
 Kudrat Ullah.
 Kumarila Bhatta.
 Kuthumi.
 Lakukshi.
 Latif.
 Lomasha.
 Madhavacharya.
 Magha.
 Mahomed Abd-ul-Baki-ur-Rahim-un-Nahavandi.
 Mahomed Ali.
 Mahomed Ali Khan.
 Mahomed bin Khawand Shah bin Mahmud, *Mirkhond*.
 Mahomed Hadi, Kamwar Khan.
 Mahomed Kasim Hindu Shah, *Ferishta*.
 Mahomed Raza.
 Mahomed Yakub - bin - Yusuf.
 Manik Kavashar.
 Manu.
 Manu Lal.
 Marichi.
 Maruf.
 Masudi.
 Maulana Ahmad.
 Maulana Jalal ud Din, Rumi.
 Minhaj us Siraj.
 Mir Ghias ud Din Ali.
 Mir Ghulam Ali.
 Mir Masum.
 Mir Taki.
 Mirza Masita.
 Mirza Mahomed Bakshah.
 Mirza Mahomed Mehdi.
 Muazzaz.
 Mulla Abdul Kadar.
 Mulla Zakhi.
 Murari Mistra.
 Murtuzzu Husain.
 Muzaffar Husain.
 Nalodaya.
 Nannaya Bhatta.
 Narsa.
 Nawab Muhabbat Khan.
 Nawab Mustajjab Khan.
 Niamat Ullah.
 Nizami.
 Nizam - ud - Din - Ahmad, Bakshi.
 Nur-ud-Din-Lutf Ullah.
 Nur-ul-Haqq.
 Omar Khayyam.
 Paksha Dhara.
 Panini.
 Parasara.
 Parthinasi.
 Patanjali.

Pitamaha.
 Prajapati.
 Pulaha.
 Pulastya.
 Qalandar, Sharf-bu Ali.
 Ramanand.
 Ramanuja.
 Ram Chatarman.
 Ram Parsad.
 Rashid-ud-Din.
 Rasakh.
 Rustam Ali.
 Saadat Yar Khan.
 Sada Sukh.
 Sadi, Shaikh Masalah-ud-Din.
 Sadik, Isfahani.
 Salihotra.
 Sambartta.
 Sampantar.
 Sankaracharya.
 Sarup Chand.
 Satananda.
 Sauda.
 Sawan Singh.
 Sayyid Ahmad Khan.
 Sayyid Mahomed Bakir Ali Khan.
 Sayyid Sabir Ali.
 Sayyid Sultan Ali.
 Shah Nawaz Khan.
 Shaikh Abu-l-Faiz, *Faizi*.
 Shaikh Mubarak.
 Shaikh Zain.
 Shams-i-Siraj, *Aff*.
 Shanka.
 Sharf-ud-din, Yazdi.
 Shatapa.
 Sheo Das.
 Sheo Parshad.
 Shisupala Badha.
 Siva Prikasa Tesikar.
 Soorjee.
 Soz.
 Sri-Harsha.
 Subhan Rai.
 Sudraka.
 Suliman the Merchant.
 Sultan Firoz Shah.
 Sumanthu.
 Suraj.
 Susruta.
 Swayambhuva.
 Tandava Murtti.
 Tan Sen.
 Taranatha.
 Tinur.
 Tiruvalluvar.
 Tokkappiyannar.
 Tulsi-Das.
 Trivikrama-Bhatta.
 Umrao Singh.
 Ungira.
 Ushira.
 Valabbhachari.
 Valmiki.
 Vana Bhatta.
 Varaha-Mihira.
 Vararuchi.
 Vashista.
 Vatsyayana.
 Vemuna.
 Vishnu.
 Vinva Mitra.
 Vrihaspati.
 Vyadi.
 Vyasa (28 of this name).
 Wali.
 Yahya bin Abd-ul-Latif.
 Yahya bin Abd - Ullah, Sirhindi.
 Yajnavalkya.
 Yusuf Mahomed Khan.
 Zia ud Din, Banri.

All new books in India are registered under Act xxv. of 1867, and the publications in 1878 were 4913, and in 1879, 4869, as under:—

	1878.	1879.		1878.	1879.
Biography,	22	29	Religion,	1502	1256
Drama,	175	146	Science,	135	146
Fiction,	182	209	„ Natural,	114	53
History,	96	143	Travels and Voy-		
Language,	612	645	ages,	2	4
Law,	249	226			
Medicine,	128	158	Viz. in English		
Miscellaneous,	1042	1065	and European,	576	523
Philosophy,	43	90	Vernacular,	3148	3008
Poetry,	604	691	Indian classics,	516	524
Politics,	7	8	Diglot, etc.,	673	814

A few officers of the East India Company's service—Gilchrist and Roebuck for Urdu, Brown and Morris for Telugu, and Molesworth for Marhatti—have done much to purify the vernacular tongues. The Christian missionaries have prepared hundreds of works, suited both for schools and for general circulation, in the fifteen most prominent languages of India and in several of their dialects; they are the compilers of several dictionaries and grammars, and they have written important works on the native classics and the Hindu and Buddhist systems of philosophy. During the ten years from 1852, they issued 1,634,940 copies of the Scriptures, chiefly single, and 8,604,033 school-books and books for general circulation. During the ten years between 1862 and 1872, they issued 3410 new works in thirty languages, and circulated 1,315,503 copies of books of Scripture, 2,375,040 school-books, and 8,750,129 Christian books and tracts. In 1870-71 two valuable works were brought to completion, the revision of the Bengali Bible, and the first

publication of the entire Bible in Sanskrit. Both these were the work of the Rev. Dr. Wenger of the Baptist Mission in Calcutta. (See Bible.)

In 1852 the scholars numbered 81,000, and in 1872 the number was 142,952. Between 1862 and 1872, 1621 students matriculated out of them, 519 passed the first examination in arts, 154 took the degree of B.A., 18 the degree of M.A., 6 that of B.L. Zanaana schools and classes are maintained and instituted through missionary agency for the houses of Hindu gentlemen.

Religions.—The chief religions, represented in one part or other of British India, are eight in number:—

- i. Judaism, with the Old Testament from Hebrew.
- ii. Christianity, with the New Testament from Greek, and in most of the languages current in the East Indies.

- iii. Mahomedanism, with the Koran in Arabic, Persian, Urdu, Tamil, Burmese.
- iv. Buddhism, with the Tripitaka in Pali and Sanskrit.
- v. Brahmanism, with the Vedas and Puranas in Sanskrit.
- vi. Zoroastrianism, with portions of the Zendavesta.
- vii. Confucius, ethics in 5 volumes or 'King' in Chinese, viz. Yi, Shu, Shi, Li-ki, and Chun-ting King, and the four 'Shu' or books, some of which were written by Mang-tze, the Mencius of European writers.
- viii. Lao-tze system, the Tau-te-Kang book of reason and virtue in Chinese.

The Jewish, the Christian, and the Mahomedan religions originated amongst the Semitic races. The Aryans produced the Brahmanical, Buddhist, and Parsee religions, with their sacred books. The (unchecked) census of 1881 returned as under the followers in British India of the several creeds:—

	Towns and Villages.	Hindus.	Sikhs.	Mahomedans.	Buddhists and Jains.	Christians.	Others and religion not known.	Total.
Bengal,	177,042	38,975,418	...	19,553,831	84,974	90,763	1,797,911	60,502,897
Assam,	10,715	2,679,507	...	1,104,601	1,521	1,947	344,443	4,132,019
N.W. Provinces, .	90,684	26,568,071	1,003	4,189,348	...	22,196	586	30,781,204
Oudh,	24,784	10,003,323	4,752	1,197,704	...	7,761	6,135	11,219,675
Ajmir,	725	376,029	182	57,809	24,308	2,225	169	460,722
Panjab,	35,740	6,125,460	1,144,090	9,337,685	36,190	22,154	945,919	17,611,498
Central Provinces, .	31,555	5,879,772	178	233,247	36,669	10,477	2,041,276	8,201,519
Berar,	5,694	1,912,155	406	154,951	...	903	168,219	2,226,496
Mysore,	19,630	4,807,425	...	208,991	13,263	25,676	57	5,055,412
Coorg,	503	162,489	...	12,541	99	3,152	21	178,302
British Burma, . .	15,857	88,177	...	168,881	2,447,831	84,219	143,905	3,736,771
Madras,	55,386	28,863,978	...	1,857,857	21,254	533,760	81,276	31,358,125
Bombay, incl. Sind,	26,652	12,989,329	24,007	2,870,450	191,137	126,063	315,685	16,181,741
Total,		139,343,820	1,174,436	40,867,125	2,832,851	897,682	5,746,673	190,862,587

The Jews on the western coast (7626) are of little social influence.

The *Parsees*, another small body (69,476), are chiefly in the Bombay Presidency. They follow the modified Zoroastrianism which their ancestors in Persia had formed. They are wealthy and enterprising, are largely engaged in foreign trade, and are taking their share in all municipal and civil duties; but they have never served in the Indian army, nor aided, in arms, any of the Indian rulers who have protected them, and they have hampered themselves with some Brahmanical restrictions. There are Jews of fair and others of black skins, showing that at some former time they made converts, but at present neither they nor the Parsees proselytize; and the same may be said of the Jains and of the Buddhists of India; but Sir J. E. Tennent describes as violent the polemical literature of the Buddhists of Ceylon.

The *Christians* of British India proper, at the last census, were found to be 897,682. They are chiefly numerous amongst the non-Aryan races, particularly in Southern India and in Burma,—533,760 being in the Madras Presidency, 126,063 in Bombay, 84,219 in Burma, and 25,676 in Mysore. In 1875, in Travancore there were 668,518 Christians; in Cochin, 140,417; in Pudukottah, 11,360. Christians of the Romish sect in French territory number 93,544, and in Portuguese territory 245,318, which makes 1,038,940 Christians for British India and the Native States. Almost all the Christian sects have missionaries from the Mediterranean to China and the Archipelago, zealous propagandists. The Romish clergymen have been the more successful, though

the effect of Dr. and Mrs. Mason's teaching amongst the Karen, and of Dr. Caldwell's amongst the Shanars, has been great. The Protestant missionaries have largely used their influence to promote secular education, and Hindus have widely taken advantage of the opportunities their schools have afforded, to acquire a knowledge of English; the Catholic missionaries from France and Italy having rather fostered the vernacular tongues.

The *Sikh* religionists, 1,174,435 in number, are almost exclusively in the Panjab. They had their origin in the semi-Hindu semi-Mahomedan teachings of Nanak. In the early part of the 19th century they were a compact body, and zealous. They were almost exclusively converts from amongst the Jat, who have largely colonized the Panjab and the Indus valley, and have spread eastwards into the N.W. Provinces. Under the maharaja Ranjit Singh, in the early part of the 19th century, they became a truly formidable sect. Nanak preached the abolition of caste, the unity of the Godhead, and the obligation of leading a pure life. From Nanak, ten gurus are traced down to Govind Singh in 1708, with whom the succession stopped.

The *Buddhists and Jains*, in the 1871 census returns, numbered 2,832,851, and of these 2,447,831 were in Burma. But Chinese from Yunnan are immigrating in great numbers into that part of India, and 3,251,589 was the number returned as dwelling there in 1881.

All the *Burmese* and most of the *Chinese* immigrants follow the teachings of Buddhism. The Tripitika, the sacred book of the Burmese Buddhists, is in Pali; but the Chinese have also brought

with them into Burma, a knowledge of the moral philosophies of Confucius, of Lao-tse, and Mang-tse, the Mencius of European writers.

The *Mahomedans* in 1881 numbered in India 40,867,125. They are partly descendants of immigrants from Arabia, and of invading and immigrating races from Persia and Central Asia; but the ancestors of the bulk of those in Bengal (and in 1881 these were near twenty millions [19,553,831], with 1,104,601 in Assam) are recognised to have been of a Mongoloid family whom the Mahomedan conquerors found in that region. Their sacred book, the Koran, has been translated into Persian, Urdu, Tamil, Burmese, and Malay, but it is chiefly read in the original Arabic, and their hadees or traditions have almost equal authority with the Koran.

The political animosity which resulted in the death of Ali and his two sons, continues to separate these religionists into the two great sects of Sunni and Shiah, who, even in British India, barely restrain their animosity. It is a feud of 1300 years. The small Mahdavi sect are fanatical. The Ismaili in India are commercially occupied, and the reforming sect, to whom the designation Wahabi has been given, are apt in their zeal to infuse political questions into their social life. They all distinguish their ethnic, or race, descent by the terms Syud, Shaikh, Pathan, and Moghul, as of Arab, Afghan, Persian, Moghul, and Turk origin respectively, and all the converts are classed as Shaikhs. The Syuds, descendants of Mahomed and Ali, are not numerous, and are quiet-mannered men, and mostly Sunni. Many of the Jat and some Rajput clans, during imperial Moghul sway, adopted the Musalman faith.

Hindu is a term ordinarily applied by Europeans to all the idol-worshippers of India, to all who are not Jews, Buddhists, Jains, Parsees, Christians, or Mahomedans. The people themselves restrict the term to their Sudra section, and distinguish by their caste names the higher caste Brahman, and the Rajput, Kshatriya, and the Seth, Chettiar, Banya, Vaisya, and servile races. The non-Aryan Pariahs and other similar races are never called Hindu. Hindus are eminently followers of some part or other of the religious or philosophical doctrines which the Brahmans teach regarding the chief deities and their incarnations, and to some extent are versed in the mythologic tales about Brahma, Vishnu, and Siva, one or other or all of whom, or their avatars or incarnations, Brahmans of the post-Vedic times have come to regard as supreme. But their worship is largely directed to the wives of the deities, to heroes whom they have deified, to plants, to animals, to sculptured images, to shapeless pieces of wood or stone; also to the sun and moon and planets; and everywhere and amongst all classes, to spirits and snakes, and to the weapons or implements of their avocations; and their theological imaginings are as varied as their gods. Brahma has few shrines,—it is said only one at Bithur; Siva is chiefly worshipped in the lingam emblem, and Vishnu in the form of one or other of the avatars in which he is believed by them to have appeared on earth to save mankind, or to punish arrogance and vice. Saraswati, goddess of learning, the wife of Brahma, has escaped the oblivion into which her spouse has fallen. But Siva and his consort Parvati, and Vishnu, with Lakshmi his spouse, claim as worshippers the bulk of those

whom Europeans call Hindus. In 1881, Hindus were returned as 139,343,820 in British India; but there was another body, 5,746,673, whose religion at the time of the census was not ascertained.

Castes.—The numbers of Hindus and their higher civilisation have secured for them a recognised superiority over the non-Aryan aborigines, and over all fragmentary tribes. To these, Hindus apply the term *m'blecha*, which has the same signification as Gentile had to the Jew, as Barbarian had to the Greek, and as E has to the Chinese. But the whole of the idol-worshippers, alike Aryan and non-Aryan, are separated from each other into a multitude of sections, who neither eat together nor intermarry, but dwell apart in different sections of their towns. These sections, known to Europeans as castes, are designated by the people, Varna, colours, or Jat or Zat, race. Their Varna and Zat names indicate differences in race, or place of birth, or nationality, or avocation, or even simply of the customs they follow. The number of such separate castes in Bengal alone is not short of a thousand. In Maharashtra Dr. Wilson enumerated 145 castes, 23 of whom were deemed unclean, and not permitted to dwell within the town walls. But, to Europeans, much of the action of the Hindus as to caste purity seems strange. Ghee is a food article in use with every Hindu, and it is carried in great leather bottles; yet the bottle-maker is one of the unclean artisans. Many, perhaps most, of the servile races are broken up nations and tribes whom wars and revolutions in prehistoric times have reduced to their present standing. To Europeans it might even seem impossible, under these conditions, for society to exist; but they are held together by an ordinance of Menu, their lawgiver, who laid down the rule that every man is pure in his respective trade.

Prominent amongst the Hindu castes are the *Brahmans*, though they, too, are separated into small sections by differences of religion, philosophy, and descent. Ages of intellectual culture have produced in them a race of recognised ability. For nearly 3000 years they have filled, under the reigning princes, all important executive and administrative offices. Once only, and that in modern times, they attained to dominion under the title of Peshwa; but their power lasted barely about sixty years, and was destroyed in 1761, by their complete defeat at Panipat.

The *Rajput* is generally accepted as representing the ancient martial Kshatriya. Clans of them hold villages in the N.W. Provinces and Oudh, where they were dominant till the 13th century; but they are still ruling in Rajputana and Gondwana, over aboriginal races, who instal their Rajput princes by making with their blood the tika mark of sovereignty.

The *Vaisya*, a third caste, are at the present day admitted to embrace all the Hindu sections who are engaged in trade; but their physical appearance indicates the most diversified origin.

Sudra, the fourth caste, includes all who are Hindus, other than the Brahman, the Kshatriya, and the Vaisya.

The *Jat* race, who followed and pushed the Rajputs farther into N.W. India, are eminently agricultural and pastoral; and, with the tall, robust Kat'hi, dominant in Kattyawar, are of a stock who still maintain many Scythic rites. There are two Jat sovereignties, Bhurtpur and Dholpur, and

several powerful Jat chiefs in the N.W. parts of India. The Jat in the N.W., the Tamil, Teling, and Canarese in the south, and the Karen on the frontiers of Burma, have given the most numerous converts to Hinduism, as nations.

All the Hinduized aborigines of the Kolarian and Dravidian stocks have been admitted into the *Sudra* section. The major part of the Canarese, the Mahratti, the Tamil, and the Telugu speaking races who are engaged in agricultural occupations, are of this division.

Castes.—It might be thought that one Brahman, or Banya, or Kshatriya family might eat or intermarry with any other Brahman, Banya, or Kshatriya household, or that any one Kunbi, or Kurni, or Pariah, or Dher might eat with or obtain a wife from others of their own caste; but differences in their tribal or clan descent, or in their occupations, keep them apart. In the many languages current, the names of identical trades and avocations necessarily vary, and even that forms a sufficient reason to keep apart the people following them. The respective castes exercise strict supervision over their members. Fines and penances are imposed on parties who deviate from recognised rules,—even excluding them from their caste. In ancient times, neglect of religious rites seems to have been a reason for depriving a person of caste. Menu says (x. 43, 44) the following Kshatriya tribes have gradually sunk into the state of *Vrishala*, from the extinction of sacred rites, and from having no communication with Brahmans:—Paundraka, Odra, Dravida, Kamboja, Yavana, Saka, Parada, Pahlava, China, Kirata, Darada, Khasa. At the present day, the penalty of exclusion from caste is inflicted on Hindus who have sailed to Europe, notwithstanding that the mercantile Rajputs of Cutch have been trading for centuries on the east coast of Africa, and Hindus are met with westwards through Central Asia to Russia in Europe. Also, Java and Bali, in the Archipelago, were conquered by a Hindu dynasty, and Bali is still Hindu; the Teling and Tamil soldiery of the Madras Presidency, and the Sikh and Hindu soldiery of the Bengal army, have conquered in Burma, China, Persia, Aden, Egypt, and Abyssinia.

A peculiar feature of the Brahmanical supremacy has been the servile position which they have enforced on the non-Hinduized aboriginal tribes, few of whom have, or only partially, adopted Brahmanism. This is not confined to the semi-barbarous forest and mountain tribes, whose long seclusion has superinduced timidity in intercourse with their fellow-men; but outside the walls of every village throughout British India are families of the Pariah, the Dher, the Mahr, the Mhang, the Ramusi, the Koli, Chamar, the Bhil, the Dhor, the Bhur, the Dom, the Mhair, the Mina, who, since two or three thousand years, have been retained in feudal slavery, who have recognised in succession the Hindu, Buddhists, Mahomedans, and Christians as their masters, and have been doing all the servile work, but have nevertheless adhered to their own fetish forms of worship, uninfluenced by their masters' creeds. Many of them are intellectual. They are brave, truthful, docile, and gentle; but the religion of their village authorities has never commended itself to them. There are small, homeless, broken tribes wandering through the country, as the Bazigar, Doomar, Korawa, Kunjar, Nuth, Sansiah, Yerkala, of whom

little is known. They almost all are predatory, and pitch their reed mat or grass huts in lone parts of the outskirts of towns.

Sacred Books.—Hindus arrange the whole of their sacred and learned works under eighteen heads, and speak of them as embracing eighteen kinds of knowledge, viz. the four Vedas, the four Upaveda, the six Anga, the four Upanga.

The *Vedas* of the ancient Aryans, styled the Rig, the Yajur, the Sama, and Atharva, are acknowledged by nearly all Hindu and Jaina sects. They consist of collections of hymns, containing a ritual, are in the Sanskrit language, and are supposed to have been composed about fifteen centuries B.C. The *Sanhita* of the Rig Veda is the earliest record of the eastern Aryans extant. The Sama Veda is a reproduction of parts of the Rig Veda. The *Upanishads* are books containing the doctrine of the Vedas explained and enlarged.

The *Puranas*, literally the old books, are eighteen in number, are of different ages, between the 8th or 9th and 14th or 15th centuries A.D. They likewise are written in the Sanskrit language, in simple sloka metre, and each treats of five subjects, viz. (1) the creation of the universe, (2) its progress and the renovation of worlds, (3) the genealogy of gods and heroes, (4) mythological chronology, and (5) heroic history, containing the achievements of demigods and heroes. They superseded the Vedas, and are the proper religious books of the modern Hindus; they are practically polytheistic, and yet essentially pantheistic.

The Hindu systems of *philosophy* are six in number. They grew out of the *Upanishads*, and are sometimes called the six *Sastra*, or bodies of learning, sometimes the *Shad Darsana*, or six Demonstrations. They are, (1) the *Nyaya*, founded by Gautama, which corresponds to the Peripatetic school; (2) the *Vaishishika*, by Kanada, corresponding to the Ionic; (3) the *Sankhya* of Kapila, corresponding to the Italic school; (4) the *Yoga*, founded by Patanjali, resembles the Stoic philosophy; (5) the *Maimansa* of Jaimini corresponds to the Platonic; (6) and the *Vedanta* of Vyasa or Badarayana, is likewise a Platonic philosophy.

Their philosophical speculations as to the nature of the soul and its relation to the Supreme, are derived mostly from three great apostles of the Vedantist schools, who flourished in Southern India, viz. Sankaracharya in the 9th century, his follower Anandagiri, author of the *Sankara Vijaya*; Ramanuja, a Vaishnava, in the 12th century, and Madhavacharya, a Saiva, a little later, in the 14th century; and their several views have separated them into believers in the *Adwaita* philosophy of Sankara, the *Dwaita* of Tirthachari, and the *Viseshta-dwaita* of Ramanuja.

Charvaka founded the materialistic school of the Hindus; he was the Pyrrho and Epicurus of India.

The Hindu mind, particularly in such as are of Aryan descent, is pre-eminently speculative, always ready to go after some new thing in the region of religion or philosophy. While the Arab, Turk, Moghul, and Persian races have been largely historical in their writings, the Hindu mind has revelled in myths, in poetry, and the drama. Their writings are clothed with images; much in them is beautiful and sublime, but so defective in all that relates to their history, that the dates even of their most famed events, the eras in which their celebrated personages have lived, cannot be

more than guessed at. When, and by whom, their great epics, the Mahabharata and Ramayana, or their sacred Vedas and Puranas, were written, has not been determined. The age in which Krishna lived is only surmised; and although he is now worshipped as an avatar of Vishnu, the date of his apotheosis is only supposed to have been about the 5th century of the Christian era. Neither as to the origin of the Saiva and Vaishnava cults have they any information on which the historian can definitely rely. Amos v. 26 gives more information about the era of Siva than all that the Hindu books contain.

What can be traced of the history of the country since the 8th century, discloses continuous religious movements amongst the people. Devout men, in all grades of Hindu society, have drawn followers around them, forming new sects of greater or less importance. The tendency of all of these has been to enjoin faith in the Supreme; and all the great leaders have founded their views on a belief in the brotherhood of man and the abolition of caste restrictions, but each in succession has become as exclusive as any of the Vaishnava sects from which they separated.

Modern Hindus barely recognise or even know several of the gods of the Vedic times. Indra, the Vedic god of the air and of the heavens, the king of the gods, compared with ancient times, is now seldom alluded to. Varuna, god of the waters, with Pavana, god of the wind, Kama, god of love, and Kartakeya, of war, are in similar neglect. Agni, god of fire, with Surya, the sun, Soma, the moon, Kuvera, god of wealth, and Yama, god of the infernal regions and judge of the dead, are better known. But the prominent deities in their invocations and worship are, Brahma the creating principle, Vishnu the preserving and Siva the destroying principles. Each of these has corresponding female divinities, who are mythologically regarded as their wives, but metaphysically as the active powers which develop the principle represented by each of these divinities. The names of these energies or saktas are respectively, Saraswati, the goddess of learning and eloquence, who continues to be invoked by the learned; Lakshmi, the goddess of plenty, who is worshipped in all households; and Parvati, who is largely worshipped, and is known also as Devi, Bhawani, and Durga. Ganesha is invoked at the commencement of all undertakings, as the remover of difficulties, and as such he presides over the entrances to all edifices.

Siva is entitled Eswara, lord, or Mahadeva, great god. He has many temples under various names, and his usual emblem relates to their physiological idea of the cosmogony.

Many of the deities now worshipped—Balaji, Kandoba, Vithoba—have been local deities in pre-Hindu times, whom the Brahman missionaries admitted into their mythology as incarnations of Vishnu and Siva.

There are many saiva sects:—

Aghori.
Akasmukhi.
Avadhuta.
Brahmachari.
Dandi and Dasnami.
Gulara.
Jangama.
Jogi or Yogi.
Kara Lingi.

Naga.
Nakhi.
Paramahansa.
Rukhara.
Sanyasi.
Sivachari or Sri-Saiva.
Sukhara.
Ukkara.
Urd'ha Bahu.

The more important of the vaishnava sects are:—

Charan-Dasi.	Ramanuja or Sri-Sampradaya or Sri-Vaishnava.
Dadu Panthi.	
Harischandi.	Raya-Dasi.
Kabir-Panthi.	Sad'hna-Panthi.
Khaki.	Sak'hi-Bhava.
Mad'havi.	Sanyasi.
Madhavachari or Brahma Sampradai.	Sena-Panthi.
Maluk Dasi.	Vairagi.
Mira Bai.	Vaishnava or Veshnav of Bengal.
Naga.	Vallabhachari or Rudra Sampradaya.
Radha-Vallabhi.	
Ramanandi or Ramawat.	

Sakta sects are:—

Dakshina or Bhakta.	Kan Chuliya.
Vami or Vamachari.	Karari.

The Tantras are the Sakta sacred books.

Reformers.—From time to time Hindu reformers have appeared, and at the present day Hindu missionaries are actively extending their faith amongst the forest tribes. The more noteworthy have been Kumarila Bhatta, about the middle of the eighth century, followed by his disciple Sankaracharya, the great apostle of Saivism in the middle of the ninth century, and his historian Anandagiri; Jayadeva, author of the Gita Govinda, lived about the 12th century; Ramanuja, in the middle of the 12th century; his follower, Ramanand of Benares, about the end of the 14th century; Kabir, a follower of Ramanand, about the end of the 14th and beginning of the 15th centuries (1380–1420); Chaitanya, in the latter part of the 15th century; Vallabhacharya, in the beginning of the 16th century.

The tendency of all Hindu reformers has been towards monotheism; and the Sad'h or Sad'hnamis, the Siva Narayani, and the Brahmo Samaj'h have been the prominent and important theistic movements of the 19th century. The last originated with Dwarkanath Tagore, and was followed up by Keshab Chandra Sen. Separations early occurred amongst them, but they may be characterized as distinctively monotheists in belief, and philosophical rationalists.

Looking at the ordinary everyday life of the people, it may be said that all classes worship the Grama-devata or village gods, and Griha-devata or tutelary divinities; and demons, the cobra snake, the sun; the spirits of the dead are recognised by all,—spirits of their own ancestors, of other Asiatics and of Europeans, of British and French officers, and ladies of Great Britain, to all of whom sacrifices are made, with offerings of flowers or fruits, or alcoholic fluids. When a pestilence breaks out, the malignant deity whom the pestilence is believed to represent, is conveyed in a procession beyond the bounds of the village with music and banners. This is the Bolwan, and is often a cause of violent quarrel with the villages to which the pestilence has been conveyed.

Religious Mendicants.—Byragi, Gosain, Jogi, and Sanyasi amongst the Hindus, all the Buddhist priests and the Qalandar fakir amongst Mahomedans, are ascetic mendicants, as also are the Man Bhao friars and nuns, and some of the followers of Chaitanya.

Mother-worship is adhered to by all the non-Aryans of the south, in the form of the Ai of the Mahratta, and the Amma or Amman of the Tamil people. It is founded on the physiological idea of development from the female principle, which

they have incorporated into all their cosmogonies, and into their saiva religion. Barth, writing as to one form of mother-worship, says (p. 202) the Vedas have a cultus very similar to that of the Tisro Devi, or the three goddesses. In the Mahabharata they are the mothers of Skanda, the god of war, and appear in the inscriptions of the Chalukya and the Kadamba, and are up to 120 in number in different parts of the country.

Spirit and astral and mother worship, in one form or other, prevails amongst all the Aryan and non-Aryan races in India. With the non-Aryans, malignant demons, bhuta, vetala, pai or pisacha, preta, yaksha, vidyadhara, rakshasha, receive attention; with the Aryan Hindus, it is the manes of ancestors that are worshipped, are brought back to the house to be again released, and have offerings presented to them periodically.

Sun and sun worship are adhered to by all castes and classes professing Hinduism. That of the sun has been continued from Vedic times, is a daily duty, and with special rites at the summer and winter solstice and at the spring and autumn equinox; that of the cobra snake also daily and periodically.

Batho is the name of the chief deity of the Cachari or Bodo. He is represented by the Euphorbia plant, which is grown in the courtyard of every Cachari house. The Euphorbia is also worshipped by tribes in Orissa and in Chutia Nagpur. The Bengali people suppose the Euphorbia ligularia to be sacred to Manasa, the goddess of snakes, and it is worshipped on certain days of June to September.

The tulsi plant, *Ocimum sanctum*, is sacred to Vishnu; and a small plant of it, grown in every vaishnava courtyard, is worshipped every morning by the women of the house. The leaves and flowers of other trees are offered to their deities,—the *Phyllanthus emblica*, the *Ægle marmelos*, and others to Siva, the *Ficus religiosa*, *Melia azadirachta*, and others to Vishnu. It is also to Vishnu that the Salagram is sacred, and worshipped daily in every vaishnava home, although it is only an ordinary fossil ammonite from the Gandak river. Murmi of the Nepalese hold the *Portax pictus* (antelope) as sacred, Murmi being their name for that animal. The Santal believe that a wild goose from the great ocean alighted at Ahiri Pipri, and there laid two eggs, from which issued the two first parents of the Santal race. A heron is the emblem of the Baori tribe, and must not be eaten by them; and the dog also is sacred to them. The Oojla Bhil reverence a white ram, and will not eat any white animal. The Oraon tribes are named after plants and animals, and these are tabooed to the tribes bearing their names.

The *gurus*, or spiritual chiefs, may be men of any caste; indeed, Mira Bai, a woman, was a guru in the 16th century, Sahaji Bai in the 18th century, and the Karta-bhaja of Bengal had a female head. Tiru Valluvar, author of the Kural, was a Pariah. The Valluvar are the priests or pujari of the Pariahs. Auvaiyar, authoress of many ethical works, was a Pariah; Valmiki, author of the Ramayana, is said to have been a Koli; Vyasa, author of the Mahabharata and the Puranas, was the illegitimate child of a Brahman and a girl of the fisher caste; Sankaracharya, the great advocate of the Saiva doctrine, is said to

have been of humble origin, but has come to be regarded as an incarnation of Siva. Kabir, also, is revered by his followers as an incarnation of the deity, who style him Jnanin, the seer, the one who has knowledge. He is supposed to have been a real personage, and to have lived about A.D. 1449. He left no writings, but his sayings have been preserved in verse, in which he opposes Hindu superstitions, ridicules the Shastras and Puranas, rejects caste and all idolatry, and demands moral purity.

A Hindu prays to avert evil. A Mahomedan prayer is a meditation on the power and majesty, the wisdom and the mercy of God; the Christian idea of a filial relation on the part of the worshipper to the Being whom he worships, which enables him to lay all his wants before God as before a father, is almost wanting in Islam. The religious services of the prayer ritual of the Mahomedans may be conducted in their mosques or in their homes. In India, the Waz or sermon is rarely given.

A large part of the landed property of the country is in the hands of religious corporations, and the religious duty of feasting and giving alms to Brahmans is said to be at least as onerous a tax as the liability to tithe. One of the best-intentioned measures of the British Government was the transfer of the funds of Hindu and Mahomedan religious bodies from the exchequer of the state to the custody of trustees elected by the worshippers. This was about the middle of the 19th century; but nothing done by the Government is said to have been more profoundly unpopular. In native opinion, not only are endowments just, but the proper protector of them is the Government. Mr. Hunter even asserts that the deepest grievance of the Indian Musalmans was the compulsion put upon them to elect their own Kazi, or ecclesiastical registrar. They said that his appointment could only be validly made by the Government; and though it was true that the Government was of another faith, such a government was better for these purposes than none at all.

Much has been done by Christian missionaries of all denominations. Nothing is known of the martyred St. Thomas, whose supposed remains are shown in a cathedral in the Madras suburbs, nor is anything certain of the early days of the Cochin and Travancore Christians, who have Sassani or metal title-deeds of early centuries of this era; but the great St. Xavier effected much permanent good around the shores of these countries, and in later times, Dubois, Carey, Ward, Marshman, Rottler, Rhenius, Wilson, Duff, have continued his benevolent labours. The influences of Christianity, spiritual, educational, and social, have been felt far and wide. The downtrodden Shanar and Choga, and the despised Pariah and Pulliar, have been raised from their state of demoralization, while many of the objectionable practices that obtained among the higher castes have either entirely disappeared or been greatly mitigated.

Arts, Manufactures, and Trade.—The artisans of India have been famed from the earliest times for excellence in the decorative and ornamental arts. Sir George Birdwood believes that the secret of their continuous success lies in the fact that the arts of India are indissolubly bound up with the popular institutions of the country, and in the patience, perseverance, and

thoroughness of Indian handicraftsmen. Their skill in architecture, displayed in the grandeur of their designs, their fresco paintings, their work in metals for ornamental jewellery and domestic use, the beauty of their woven fabrics, both silken and mixed, as seen in their Kimkhab, Hemroo, and Mushroo, and the taste displayed in their arrangement of colours, have won the admiration of all nations. Notices of these will be found under their respective headings, and reference also may be made to the articles on architecture, armour, arts, Beder ware, Bombay work, brass, carving, carpets, colours, enamel, inlaying, jewellery, lace, sculpture, shawls, silk.

Since the advent of Europeans, with ways and habits different from orientals, and displacement of the wealthier princes, the high art of Indian workmen has suffered, while the yearly value of the trade in the raw and special products of the country, and in the cheaper manufactures of Europe, has increased. Western Asia and Northern Africa have traded with India from prehistoric times; the land routes have changed with the rise and fall of empires, but Povindah caravans still successfully fight their way from India through Central Asia. Since the early part of the 19th century, the sea-borne traffic has increased twenty-fold. Reference may be made to the headings cotton, gunny, hides, jute, leather, opium, pottery, silk.

The production of some of the articles of older trade—raw silk, shawls, sugar—has decreased; but the exports to foreign countries by land and sea have increased beyond the most sanguine expectations—in 1879-80 to the value of £67,212,363. These consist of wheat, rice, and other food-grains, oil-seeds, hides and skins, fibres of coir, cotton, jute, and wool, cinchona, coffee, tea, tobacco, and opium, with indigo and other vegetable dyes, and coal for internal consumption. On the other hand, importing to the value (1879-80) of £41,166,003, chiefly of manufactured articles. Of the exports, the value of the opium sent abroad was £14,324,146, and of raw cotton £11,145,453; while the imported cotton piece goods, twist, yarn, thread, etc., and of woollens, was valued at £19,669,053, £20,697,511.

The cramping effect of the sair or transit duties on traffic was early recognised, and in the early part of the 19th century they were entirely abolished, and a watch has been kept over the action of the municipalities, in their levy of octroi duties, to prevent the reintroduction of the sair in another form.

The growth which, of late years, has taken place in the foreign trade of India, is due in a large measure to the extension of railway communication. The quantity of merchandise, exclusive of minerals, conveyed by railways, increased from 2,633,687 tons in 1870, when the mileage was 4775, to 9,319,421 tons in 1880, when 9325 miles were open. In the same period, the value of exports increased from £55,336,186 to £74,517,957, and of imports from £34,469,119 to £50,278,875. Wheat and other raw products from the distant Panjab, a thousand miles from the sea, are successfully competing in Britain with the products of America. Coal is worked in Bengal by upwards of 60 collieries, the total output being not far short of 1,000,000 tons per annum. Dye-works, tanneries, soap-works, sugar refineries, silk-works, and paper

mills are in operation; the Indian breweries turn out 2,000,000 gallons of beer every year. The success of cotton spinning and weaving mills in Bombay led to an extension of this industry in other parts of India, where there is an abundant population from whom to draw for labour, and who are also the consumers of the manufactured fabrics. The jute mills in Bengal have eclipsed the special industry of Dundee,—Dundee capital and Dundee skill having been transferred from the banks of the Tay to the banks of the Hoogly; and the trade in seeds and cereals in India is sufficient to take off any extra quantity of jute bagging that may be produced. Up to 1882 there had been 58 cotton mills established in India, for mule yarn, mule twist, cotton twist, twist and yarn (St. Tab. Br. Ind., 1882), 44 of them in the Bombay Presidency, where the enterprising Bhattia and Parsee have been the leading races in all mercantile transactions; six of the cotton mills are in Bengal, and three in Madras.

Nothing in the history of commercial progress is more healthy than the course of the trade of India, both foreign and coasting, since the mutiny of 1857. The foreign commerce—and it partly feeds the coasting trade—has more than doubled in value since 1855-1856. The figures show the annual averages for quinquennial periods of both merchandise and treasure:—

Years.	Imports.		Exports.	
	Merchandise.	Treasure.	Merchandise.	Treasure.
	£	£	£	£
1834-5-8-9	4,970,619	2,345,335	11,071,529	251,069
'39 40-3-4	7,691,428	2,762,164	13,789,770	462,792
1844-5-8-9	9,136,126	3,073,249	15,675,044	1,320,504
'49-50-3-4	11,058,538	4,792,802	19,023,095	994,030
1865-66	13,943,494	11,301,238	23,039,268	601,177
1854-5-8-9	15,577,392	11,275,150	24,924,770	922,707
'59-60-3-4	23,971,452	17,091,515	42,146,589	1,022,697
1864-5-8-9	31,696,958	17,617,777	55,862,871	1,801,554
'69-70-3-4	33,036,588	8,264,512	56,252,723	1,590,272
1874-5-8-9	38,363,836	9,858,019	60,324,893	2,809,733
1879-80	41,166,003	11,656,535	67,212,363	2,035,148
1880-81	53,116,770	8,997,214	74,554,232	1,440,441

Details of Foreign Trade, exported in 1880-81,
£74,554,232.

Articles.	Denomination.	Quantities.	Value.
Coffee,	cwt.	370,714	£1,602,594
Cotton, raw,	cwt.	4,541,548	13,241,744
„ goods, twist, & yarn, . . . . .	...	...	3,108,113
Dyes—Indigo,	cwt.	116,870	3,571,585
Rice not in the husk,	cwt.	26,769,355	8,971,667
Wheat & other grains, . . . . .	...	...	3,739,973
Gums and resins,	cwt.	345,110	475,950
Hides and skins, . . . . .	...	...	3,735,646
Jute, raw,	cwt.	5,809,815	3,934,030
Manuf. gunny bags,	no.	52,386,227	1,130,722
Lac,	cwt.	88,394	578,333
Oils,	galls.	5,323,282	598,342
„	cwt.	51,612	...
Opium, chests,	chests.	92,190	13,600,148
„ weighing,	cwt.	127,484	...
Provisions, . . . . .	...	...	366,095
Saltpetre,	cwt.	353,005	351,735
Seeds,	cwt.	10,303,776	6,392,185
Silk, raw,	lbs.	1,609,606	618,287
„ manufactures, . . . . .	...	...	250,256
Spices,	lbs.	17,071,838	368,771
Sugar,	cwt.	644,531	507,055
Tea,	lbs.	46,918,539	3,099,887
Wool, raw,	lbs.	25,748,121	1,170,624
Wood, . . . . .	...	...	545,853
Other articles, . . . . .	...	...	2,594,637

Values of Principal Imports into India, £53,116,770.

Cotton piece goods,	£22,640,765
.. twist and yarn,	3,699,273
.. thread and other sorts,	273,549
Metals, raw,	832,920
.. manufactured,	3,014,076
Railway materials and stores,	2,742,689
Machinery and mill work,	835,503
Liquors,	1,537,812
Salt,	663,517
Silk, raw,	1,067,018
.. goods,	1,350,384
Sugar, refined and unrefined,	1,611,157
Woollen goods,	1,466,122
Other articles,	4,778,532

The growth of staples of export, during the twenty years since the mutiny, will be seen from the following instructive figures:—

	1859-60.	1864-65.	1868-69.	1869-70.	1880-81.
Coffee,	£188,532	£801,908	£1,101,384	£861,702	£1,602,594
Cotton, raw,	5,637,624	37,573,637	20,149,825	19,079,138	13,241,744
Indigo,	2,021,283	1,860,141	2,893,823	3,178,045	3,578,585
Rice,	2,276,296	5,573,537	4,210,925	3,020,276	8,971,667
Wheat and other kinds of grain,	312,266	382,871	231,143	132,253	3,739,973
Hides and skins,	444,537	725,236	272,991	333,333	3,934,080
Jute,	290,018	1,307,844	1,891,899	1,984,495	13,693,330
Opium,	9,054,394	9,911,804	10,636,654	11,693,148	6,392,185
Seeds,	1,548,721	1,912,433	1,385,400	2,189,002	618,287
Silk, raw,	817,853	1,165,901	373,506	1,422,076	507,055
Sugar and sugar candy,	1,031,944	765,110	951,376	276,946	3,099,887
Tea,	436,672	1,151,002	615,125	1,037,893	1,170,624
Wool, raw,				465,238	

With the increasing imports and exports, the number and tonnage of the shipping engaged in the foreign trade has grown from 2189 vessels, aggregating 314,139 tons, entered and cleared in 1858-59, to 3083 ships of 555,220 tons in 1880-81. The size of the ships trading from Europe has been increased from 800 and 400 to 2000 and 3000 tons, but the trade to other foreign countries continues to be carried in small vessels, averaging 143 and 180 tons.

Annual Average of Gold and Silver Imports and Exports.

Years.	Imports.		Exports.	
	Gold.	Silver.	Gold.	Silver.
1834-5-8-9	£2,374,627		£253,370	
1839-40-3-4	2,890,740		562,686	
1848-49	1,401,748	2,798,628	52,830	2,484,724
1849-50-3-4	1,214,690	3,573,288	60,361	939,897
1854-5-8-9	2,566,900	8,708,130	59,245	859,227
1859-60-3-4	5,905,578	11,185,935	16,040	1,004,154
1864-5-8-9	6,156,460	11,461,317	321,342	1,480,212
1869-70-3-4	3,263,586	5,000,926	190,469	1,399,803
1874-5-8-9	1,682,261	8,175,758	1,042,667	1,767,068
1879-80	2,050,393	9,605,002	299,889	1,735,259
1880-81	3,681,058	5,316,156	16,859	1,423,582

Seasons.—In India generally there are three well-marked seasons, the cold, the hot, and the

rainy. The cold season of the year corresponds with that of all northern latitudes, and lasts from the middle of December to the middle or end of February; and although it is only in the N.W. Provinces of Bengal or on the Neigherry hills in the S., and occasionally on the table-lands of Central India, that the thermometer sinks below the freezing point, the dry winds which then blow over the plains and elevated tracts, cause a sensation of great cold. It is in this season that the thermometer has the greatest daily range, varying from 19° to 39°.

The hot season commences in March. By May the heat is intense everywhere but on the mountains. The rivers dry up, and the earth is scorched and fissured by the great heat. The country seems a desert; all nature is hushed; it is the stillness of the winter of the poles. This is succeeded by a few sultry days in the end of May, the forerunner of the rains of the S.W. monsoon; in June and July this monsoon has carried the rains to almost every part of India, reaching the different provinces according to their proximity to the southern oceans, or to the direction given by the mountains to the winds. The face of the country then becomes green with its natural vegetation and the crops of the cultivators, the rivers are all full, and parts of the lowlands flooded, particularly in Bengal, where in several places the ryots go to their fields on rafts. This monsoon is ushered in with great electric changes, and prevails till the end of September, when it disappears with thunder and lightning as it came; the occurrence of these electric phenomena marking the breaking up of the monsoon. The fall of rain, while this monsoon lasts, varies from 12 to 250 inches in the different provinces, but it is distributed to a greater or less extent over almost all India, the only part deprived of it being the Karnatic, where, so far N. as Ongole, only slight showers fall in July. The hot weather consequently continues in the Karnatic from April until November, when the winds change to the N.E., and bring the rains of that monsoon across the Bay of Bengal.

The N.E. monsoon rains, however, only last for six weeks or two months, and do not extend so far inland as those from the S.W. Indeed, at places in the Western Peninsula within a hundred miles of its Eastern Ghats, it is marked only by the occurrence of heavy showers. At Madras, on the Coromandel coast, the annual fall of rain is about 50 inches.

Besides these, in Northern India a well-marked season of winter rain also occurs, commencing about Christmas and extending to February.

The period and the amount of rain differ greatly in the several provinces of India. The fall is very heavy on the tracts offering a front to the S.W. monsoon, as on the Western Ghats, and on the tract between them and the sea, being as much as 70 to 100 inches at the sea level, and as much as 250 inches on the mountain face. Similarly, along the Tenasserim, Pegu, and Arakan coasts, on the mountains of Assam, and along the foot and outer slopes of the Himalaya throughout its whole extent, reaching 100 inches or more.

The country may be classed generally into three regions,—the portion of India E. of the 80° meridian has a rainfall of more than 40 inches; the portion W. of the same meridian has less than 40 inches; and a third region, in which the fall

is less than 30 inches, includes almost the whole of the Panjab, a considerable part of the N.W. Provinces, a large part of Rajputana and Kattyawar, as well as almost the whole plateau of the Dekhan and Mysore. In Sind, and in the southern portion of the Panjab and most western part of Rajputana, the rainfall is less than 15 inches, and is extremely small and irregular, and the country is either actually desert, or agriculture is only possible with the aid of artificial irrigation.

Wars have aggravated distress; but all Indian famines are caused by drought, and the districts most subject to droughts are the western and southern portions of the N.W. Provinces and that part of the Panjab territory which lies east of the Sutlej, also the western and northern states of Rajputana and of the central plateau which border on the N.W. Provinces; likewise the districts of Bombay above the Western Ghats, the western region of Hyderabad, all Mysore, and the districts of Madras above the Eastern Ghats, and those along the E. coast and at the extremity of the Peninsula. The region whose total rainfall is from 20 to 35 inches has frequently suffered from severe scarcity, and within it have occurred the great famines of 1837-38 in the N.W. Provinces, of 1868-69 in Rajputana, and of 1876-77 over nearly the whole of the Peninsula of Southern India. These were mainly due to the failure of the S.W. monsoon. The drought of 1865-66 and some of the earlier scarcities in the Madras Presidency arose from failures of the rain of the N.E. monsoon on the east coast, a failure which in that year extended into Western Bengal.

How varied are the amounts falling at different places, will be seen from the following list:—

Kotri,	Inches 2	Bellary,	Inches 22
Soopa,	5	Secunderabad,	27
Multan,	6	Honore,	114
Sasur,	6	Vingoria,	118
Indapore,	7	Darjiling,	130
Sirsa,	13	Akyab,	219
Lahore,	15	Mahabaleshwar,	254
Jhelum,	17	Malcolmpet,	262
Coimbatore,	21	Cherrapunji,	524

In 1861 the rainfall at Cherrapunji was 805 inches, of which 366 fell in July; 559 and 615 inches also have been measured.

The main agricultural operations of the country correspond with the principal seasons of rain, and their relative importance is in a great degree dependent on the local distribution of the rainfall at the various seasons of the year. Where the natural rains have alone to be relied on, only one crop is obtainable; but with an abundant water supply from inundant channels or tanks, two or even three crops are had, the three harvests being spring (arit), asu or autumn, and paush or winter. The fluctuations of the total rainfall from year to year in all parts of the country are very considerable, and scarcely a year passes free from anxiety as to some part or other of India suffering from scarcity of food, or actual famine, caused by drought.

Famines.—However great may be the injuries from Indian rivers, the area affected by an inundation, though large according to European notions, is really insignificant compared with that ruined by an endless hot season. Even the tidal wave which swept over Sandip in 1876, and Saugor island in 1833, and again in 1864, filling the tanks with brackish water, and sweeping away human

beings and cattle, with houses and chattels, in the space of three or four minutes, never produced such intense suffering or left such traces as the famines of Orissa, of the N.W. Provinces, and of the Madras Presidency. In Mysore the famine of 1876-77 is calculated to have caused a loss of population of 1,650,000, another estimate being 2,190,987.

Since 1769, with the exception of Burma, the most eastern parts of Bengal and Sind, hardly any part of India has escaped the visitation of severe famine, and over considerable portions acute distress has recurred frequently. Of 21 famines and scarcities recorded up to 1880 in any part of India, the proportion is 24 years of bad seasons to 85 years of good, or about two bad to seven good; in each case, on an average, one-twelfth of the population of the whole country—that is, about 20,000,000—may be approximately taken as the portion affected, so that the result might be said to be equivalent to a famine or scarcity over the whole country once in 54 years. Of these calamities eight may be classed as intense famines, nine as famines, and four as severe scarcities. Omitting severe scarcities, there have been 17 famines affecting 20 years, and occurring at an average interval of five years. Of the 8 greater famines, affecting 11 years, 5 have occurred in the 19th century, and have affected 202,000,000 of people, so that each on an average has been felt by 40,000,000, or one-sixth of the population of India. In Bengal, during the 110 years over which the records extend, four droughts only have occurred, of which two were very severe. Previous to the Orissa famine in 1866, Bengal had enjoyed complete immunity from famine for 81 years; and on this occasion, as well as in 1873-74, only the western parts of the province were affected. In the N.W. Provinces nine droughts are recorded, of which two were intense and three very serious. The two greatest famines in this part of the country, those of 1783 and 1837-8, were separated by an interval of 53 years; but there was a frequent and highly irregular occurrence of less important droughts. In Bombay nine seasons of drought appear, of which two were extreme; and in Madras there were eight such seasons, of which two were excessive. Excluding Bengal, the average interval between the several recorded droughts, great and small, in any one province, is about 11 to 12 years, and between those of the severest type about 50 years. The Government of India has to be prepared for the occurrence of scarcity, in some degree of severity, and in some part of the country, as often as two years out of every nine; and great famines may be anticipated at average intervals of twelve years. Seasons of drought do not occur simultaneously in Southern and Northern India, though some tendency is shown for a bad year in the north immediately to follow a bad year in the south. On the assumption that no famine is likely to be worse than that of 1876-8, which affected a population of 36,000,000, the Famine Commissioners were of opinion that the largest number likely to be severely affected by famine at one time may be put at 30,000,000, of which 15 per cent., or 4 millions, would probably be in receipt of relief in the worst months, and about seven or eight per cent., or from two to two and a half millions, continuously for the space of a year. It was considered by them that a loss of

harvest amounting to less than 50 per cent. of a full crop will not produce famine; but where the whole out-turn of the year is diminished to 25 per cent., it may be taken as certain that intense famine will prevail; whilst an estimated failure of even a third of the year's out-turn will always demand the utmost vigilance and preparedness on the part of the authorities, as relief measures may at any moment become necessary.

British India grows more grain food than the people require. The Famine Commissioners in their report state that the Madras Presidency, during the terrible visitation of 1876-78, was able to draw on the surpluses of Bengal to the extent of two million tons of food-grain, almost all rice, which was not an extension of a pre-existing trade, but the sudden creation of a new one. The same Commissioners estimated the aggregate surpluses of all the provinces, available in case of need for the supply of each other's deficiencies, and for foreign export, at five million tons in a year free from drought, a condition which rarely exists in all the provinces at once. The following is an estimate of the grains under culture:—

Provinces.	Percentage of Food-grain Area under—			Popn. eat- ing Rice.
	Wheat or Barley.	Millet.	Rice.	
Panjab.	54	41	5	1
N.W. Provinces.	57	34	9	4
Bengal and Assam.	...	...	...	...
Central Provinces.	27	39	34	3
Berar.	17	82	1	...
Bombay.	7	83	10	2
Madras.	...	67	33	10
Mysore.	...	84	16	1

With augmenting means of intercommunication, it will daily become easier to deliver the food-grains used by man, but no amount of railway extension can possibly suffice to lay down in a famine district the forage needed by its cattle.

Political and Social Reforms.—Dr. Hunter has recorded the opinion that the modern history of the British in India, as benevolent administrators, may be said to begin with Lord William Bentinck. The inscription upon his statue at Calcutta, from the pen of Lord Macaulay, says: 'He abolished cruel rites; he effaced humiliating distinctions; he gave liberty to the expression of public opinion; his constant study was to elevate the intellectual and moral character of the nations committed to his charge.' His two most memorable acts are the abolition of sati, or widow-burning, and the suppression of the thugs.

Much has been done to promote civil and religious liberty. Up to 1882, about 1000 towns had been granted municipalities, a step towards self-government of the country generally. Liberty of conscience is assured to all classes. A Hindu can change his religion, and retain his property. A Hindu widow can re-marry. Courts of justice have been established, and appeals to the British throne permitted.

A code of criminal law has been introduced, and made applicable to all the people; and in civil law, the different races have had their own traditions applied to them.

In 1833, the British Government determined that a body of substantive law, criminal and civil, should be framed for India, and Mr. (afterwards Lord) Macaulay was appointed head of a commission for this purpose. A penal code was the

first fruits of this. In 1853, a Legislative Council for all India was formed of Government officers; but in substitution of this, a supreme legislature was appointed in 1861 for all India, and from 1861 to 1871 a commission in London was engaged in preparing drafts of laws. Up to 1870 they submitted draft Acts for civil and criminal procedure; succession, contract; evidence acts, negotiable securities, and transfer of property bills. A law of limitation has been passed.

The Presidencies of Madras and Bombay, and the Lieutenant-Governorships of Bengal and of the North-Western Provinces, have each a High Court, supreme both in civil and criminal business, with an ultimate appeal to the Judicial Committee of the Privy Council in England. Of the minor provinces, the Panjab has a Chief Court, with three judges; the Central Provinces, Oudh and Mysore, have each a Judicial Commissioner, who sits alone; while in Assam and British Burma, the Chief Commissioner, or supreme executive officer, is also the highest judicial authority; and magistrates and judges, European and native, are in numbers in the districts, with Small Cause Courts in all the great towns.

The laws administered in the Indian courts consist mainly of the enactments of the Indian Legislative Councils (imperial and provincial), and of the bodies which preceded them; also statutes of the British Parliament which apply to India; likewise the Hindu and Mahomedan laws of inheritance, and their domestic law in causes affecting Hindus and Mahomedans; and the traditional customary law affecting particular castes and races.

The Hind and Mahomedan codes of law are observed in all matters relating to marriage, inheritance, adoption, partition of property, testamentary disposition, management of religious institutions, and the like.

A system of police has been introduced throughout all British India, which has been largely imitated by Native States; and jails have been erected for criminals, in place of the mutilation, blindings, and other barbarous punishments. Hitherto, however, mortality in Indian jails has been far higher than that of the adult population.

Amongst the people, the annual death-rate has been 32.57 per 1000. In the native army, in 1877, it was 13.38 per 1000, and the mortality amongst the European troops was 12.71 per 1000, the lowest on record.

Prisoners.	1877.	1878.	1879.
Convicts.	73	92	76
Under trial.	70	45	44
Civil.	22	25	21

Total prisoners. . . 118,456 135,227 122,675

The police force in 1879 had 16,180 officers, and 126,189 men, armed in equal numbers with muskets or swords, or only batons.

The British have endeavoured to lighten the forms of the land tax, as they found it prevailing in the acquired provinces, and the ryotwari, the zamindari, and the village tenures now in force, have resulted from the changes made. The zamindari system resembles that of the estates of Great Britain. As before mentioned, it was introduced into Bengal by Lord Cornwallis in his Code of 1793; and by his permanently alienating districts for a rental far below the present value, there

has been lost to the general revenue millions yearly, while the cultivators have been rendered more dependent than in other parts of the dominion. How to remedy the error of 1793 is a constant thought to the rulers. Under Native rule, a simple order would have done it.

In the land laws enacted in 1859, the British Government have endeavoured to protect the cultivators of Bengal, by classing them into—

(1) Tenants since 1793, whose rents the zamindars could not augment;

(2) Tenants of twenty years' standing, whose rents also could not be increased;

(3) Tenants of twelve years' holding, to whom occupancy rights were granted;

And, in 1879, a commission sat for further inquiry, and the twelve years' tenancy was made into a joint proprietary.

Education.—The British Government has founded universities, with colleges, where classics, with the vernacular tongues, also the sciences, are taught. Under the princes of India, both Hindu and Mahomedan, the learned men had been training scholars, mostly private pupils, in all the branches of learning customary in the east, but there never had been more than one or two Mahomedan or Hindu collegiate institutions. Education has received a continuous attention from the British. Warren Hastings, in 1781, established in Calcutta a Madrassa for the Mahomedans; the Marquis Wellesley formed the College of Fort-William; and Lord Amherst, Sir Thomas Munro, and Lord William Bentinck aided in its advancement. In 1880 there were 71,435 colleges, technical, secondary, and primary schools, with 1,951,909 students. Of these institutions, 40,662 were aided by Government, and 14,286 unaided. The receipts were Rs. 1,62,07,138, and the expenditure Rs. 1,61,59,383.

The desire for education has been vastly stimulated by restricting admission into the employ of Government, to such as pass a successful examination. In Britain, any one may appear for the covenanted civil service or for a commissioned military appointment, but only those who attain the highest marks are accepted—about 16 per cent. Similarly, the great uncovenanted civil service of India is also open to all who are successful in a public examination; in all the services, age being the sole limit. In India, in the ten years 1871-1880, the results of the examinations in the lists of passed candidates were as under at the universities:—

	Passed.	1st Arts.	Arts M.A.	Law.	Medi.	Civil Eng.
Calcutta,	9842	2462	269	687	754	53
Madras,	7106	1553	12	88	37	18
Bombay,	2915	503	29	57	292	243

From the earliest arrival of Christian missionaries, especially in the south of India, parents of all creeds, Christian, Hindu, and Mahomedan, have sent children to their schools, though the education they impart is openly and avowedly founded on a Christian basis. Since the middle of the 19th century, universities, with medical, engineering, and other colleges, have been established at all the great centres of government, where the highest branches of western learning are taught; and by grants of money in aid of private efforts of missionary and educational bodies, the masses have been reached. In 1857 the pupils were 200,000. In 1877 they numbered 1,700,000. Museums have been founded

at Madras, Calcutta, Bangalore, Allahabad, Bombay, Travancore, and Nagpur; libraries have been formed in many of the cities and towns; model farms have been opened to instruct in agriculture. Agri-horticultural and botanical societies are aiding in the introduction of economic plants. Great efforts have been made to gather and husband the water supply; to protect the trees by means of a forest department; to discover the causes of cattle murrain, through the agency of the veterinary officers; and a meteorological department has been established to aid in spreading information as to possible droughts.

The literature and history of the country during Buddhist, Hindu, and Mahomedan times, are being traced by the Asiatic societies, which were originated in India by the British in the 18th century. Liberal grants have been annually made for marine, topographical, and trigonometrical surveys, for cadastral field survey, for a geological survey, also for a meteorological department, and for geographical and archaeological research.

It is amongst the non-Aryan races that Christian missionaries and Government officers have been most successful in their efforts to impart a higher civilisation. Xavier converted to Christianity many of the fisher races of the Indian and Malacca Peninsulas; Augustus Cleveland, a civil servant, did good amongst the races of the jungle Terai of Rajmahal; General Sir James Outram, while yet a young officer, was able to make an impression amongst the Bhils; Colonel Dixon, amongst the Mhair race; the Rev. Dr. Mason and Mrs. Mason, among the Karen; and Bishop Caldwell, amongst the Maravar and Shanar.

In ancient times the Hindus had a really scientific acquaintance with the practice of therapeutics and surgery. They appear to have acquired their knowledge and skill from dissection and other methods similar to that of modern Europe; and it is to the rigid imposition of the shackles of caste, forbidding contact with dead or morbid matter, that the decline of this science is to be attributed. But since the early part of the 19th century, the Brahmanical races of Bengal have again taken to the study of medicine.

Private and official correspondence have been largely facilitated by the British. A letter under a tola (180 grains) is carried from one end of India to another for half an anna, equal to 0.75 of a penny. In 1871 the letters, etc., sent through the post-office were 85,689,823. In 1880 the number rose to 142,977,644; but above one-third of all the letters were registered. Improved postal services, with the introduction of telegraphic communication, the opening of roads, railroads, and canals, and the construction of bridges, have done much to extend the range of commerce, and of these the influence of railroads and the Suez Canal has been marked. The Suez Canal is 100 miles long, and ships of many thousand tons burden pass through it.

In 1857 there were 274 miles of railway open. In 1876 there were 6832 miles, and at the commencement of 1881 there were 9619 miles of railway open to traffic, and 646 under construction. During the year 1881, 318 were opened to traffic, and the commencement of 1482 miles was sanctioned. The total capital outlay on railways to the end of 1883 will be £138,937,000,

namely, £68,292,000 on guaranteed railways, £31,852,000 on state lines, and £38,793,000 on the East India Railway.

In 1857 there were 1,825,000 passengers by rail; in 1875, 26,779,000; and in 1880, 48,040,940, besides season ticket holders. The Government have opened the great thoroughfares, the great trunk lines. They have secured a certain amount of communication between all parts of India; but there remain great tracts of country, some extremely rich in agricultural wealth, some rich in mineral wealth, which have not yet been opened up.

Irrigation.—Canals, inundation channels, dams, and wells, have been constructed both by former rulers and by the British, in order to obtain water for irrigation; and some of the ancient and modern works are on a gigantic scale. Of the cyclopean Ghorbasta builders of Baluchistan, nothing is known; but to have undertaken such gigantic works, they must have been pressed to the utmost. The lands adjoining these, as also the hillsides of the Himalayas, and of the islands in the Archipelago, are levelled and terraced for cultivation.

The Dravidian races of the Peninsula have formed multitudes of tanks. No view can better show the labours of this race, than is to be obtained from the top of a hill in the Karnatic at the close of the N.W. monsoon, when the whole country is seen studded with tanks. Bhandara is watered by the Waingunga, and noted for no less than 3648 tanks made by native engineers, who availed themselves of the dips and hollows of an undulating country, and constructed dams wherever the ground sloped. In the Mewar state in Rajputana, are several fine artificial lakes; that near Debar is 25 or 30 miles in circumference. At Hyderabad, the Husn Sagor tank is about 8 miles in circumference, and the Mir Alam tank has a small steam yacht. At Cumbum, a lake of 15 square miles has been formed by damming up the Gundlakamma river. The Chambrambakam tank supplies 10,000 acres of rice cultivation. In fourteen Madras districts there are 53,000 tanks, with about 30,000 miles of embankments. These are mostly the work of pre-British dynasties.

In the south of India, canals have been led from the Tumbudra; in the deltas of the Godavery, Kistna, and Pennar; the Palar in Chingleput and N. Arcot, the Vellar in South Arcot, the Colerun in the delta of the Cauvery, the last-named a monument of the skill of Colonels Sim and Sir Arthur Cotton.

The eastern and western Jumna canals are the oldest of the perennial canals of Northern India. They were constructed during the Moghul empire, but since 1819 the western canal has been somewhat improved by the British. The eastern Jumna canal in 1875 was 130 miles long, with 618 miles of main distributaries.

The Ganges canal was commenced by the British in 1848, and opened in 1854. Its principal head is about 2½ miles from Hardwar. In 1875 its length was 519 miles, with 3386 miles of distributaries, and with an irrigated area of 889,167 acres.

The Bari Doab canal has been led from the left bank of the river Ravi; it was commenced in 1850.

In the Dehra Doon and Rohilkhand there are five canals, 66 miles in aggregate length; and in Rohilkhand and Bijnaur are a series of badly con-

structed canals about 300 miles in length. The Sarkand canal leads from the Sutlej, the Agra canal from the Jumna, the Son canal from the Son, and the Orissa canals from the Mahanadi.

In Bundelkhand, canals have been led from the rivers Betwa and Dassan.

The Lower Sutlej and Chenab canals are 19 in number, and 418 miles in aggregate length. The four Upper Sutlej canals have 47 miles of length.

The Indus canals, 13 in number, have an aggregate length of 577 miles. They are all drawn from the right bank of the river in the Dehra Ghazi Khan district.

In the Shahpur district are 18 inundation canals.

In Sind are the Sakhar and Shahdadpur perennial canals, and 8 inundation canals, the Sind, Ghar, Eastern and Western Nara, Bigari, Mitran, Thar, Fallali.

On the Bombay side are the Jamda in Kandesb, the Krishna, and the Ahmadnagar canals.

Forests.—It had long been acknowledged by all writers that trees have a great influence on the humidity of a climate, but it was not until the middle of the 19th century that any regular care was taken of the forests of India. The subject was brought by the editor to the notice of the Madras Government, and the Directors of the E. I. Company ordered the appointment of conservators of forests, but Act vii. of 1865 was the first Forest Act passed by the Government of the country. The continuous denudation of extensive tracts in such fine districts as Midnapur, Bankura, Birbhum, and Bardwan, without any corresponding development of agriculture, is said to have perceptibly decreased the rainfall and the power of the soil to store water. The forest reserves in 1879–80 were 15,344 square miles, as under:—

British—

Bengal, . . . Sq. m. 2945	Assam, . . . Sq. m. 2015
N.W. Provinces, . . 2200	Coorg, 200
Oudh, 1079	Ajmir, 101
Panjab, 795	<i>Non-British—</i>
Central Provinces, 2535	Mysore, 454
British Burma, . . 1612	Berar, 1388

In the ten years 1871 to 1880 the forest revenues amounted to £5,949,099, and the charges to £4,114,927. With every year the object has more and more been rather to preserve and restore by replanting, than to profit by the sales. Indeed, the destruction has been so great in many places, that the state for many a year to come might expend all in replanting.

The coffee plant was not a gift of the British, though its cultivation has been much fostered. It is said to have been introduced into Mysore about the middle of the 17th century, by Bawa Budan, a Mahomedan fakir, and the cultivation extended into Ceylon, and, since the early part of the 19th century, largely into other parts of Mysore, Coorg, Travancore, and Cochin. In 1880 the number of plantations and plants and approximate yield were as under:—

District.	Planta- tions.	Plants.		Yield, lbs.
		Mature.	Im- mature.	
Bengal, . . .	1	5	3	320
Madras, . . .	18,315	63,026	10,561	18,513,138
Mysore, . . .	24,843	...	...	4,004,656
Coorg, . . .	4,685	39,750	7,500	7,603,120
Travancore, . .	119	14,360	2,415	2,515,716
Cochin, . . .	15	1,436	487	463,828
Total, . . .	47,978	162,847	35,482	33,100,778

Cotton has been cultivated in India from pre-historic times; but in the early part of the 19th century, in the Peninsula, much outlay was incurred in efforts to improve the quality. In 1879-80 there were 10,708,031 acres under cotton cultivation, yielding 5,181,550 lbs. of cleaned cotton, or an average of 59 lbs. of cleaned cotton per acre. In the Central Provinces and in Mysore the yield was only 24 and 25 lbs. respectively; but in the Nizam's dominions, the Panjab, and British Burma, 68, 90, and 147 lbs. respectively were obtained.

Tea.—The introduction of tea-planting is wholly a British gift to India. The tea plant was discovered about the year 1825 growing wild in Assam, and it is now largely cultivated in several parts of British India.

District.	Plantations.	Plants.		Yield, lbs.	Average yield in lbs. per acre of Mature Plants.
		Mature.	Immature.		
Assam, . .	1,045	120,512	33,145	34,013,583	282
Bengal, . .	274	27,341	11,464	6,572,481	239
N.W. Prov.,	87	6,848	1,238	838,743	292
Panjab, . .	1,195	4,816	2,780	802,995	167
Madras, . .	84	2,573	1,702	649,460	252
Brit Burma,	6	25	154	16,120	105
Total, . .	2,691	162,244	50,354	42,893,796	...

Cinchona trees, another grand gift to India, were introduced in the middle of the 19th century (1860), by Mr. Clements Markham, C.B., who twice visited South America, and twice conveyed to India different species of cinchona, which he and his scientific assistants had obtained there. In 1880-81 the state of the plantations was as under:—

	Sikkim.	Burma.	Neilgherry.	Mysore.
Acres,	2,332	...	847	51½
Plants, Cuttings, and Seedlings, }	5,207,870	64,438	677,355	42,860

The organic constituents of cinchona barks are quina, cinchona, aricina, quinidia, quinia, chinconidia, tannic acid, quinonic acid. The medicinal forms are quinine, quinidine, chinchonine; chinchonidine. Quinine is being steadily superseded in India by a cinchona febrifuge manufactured in the country. It is now in general use in Government hospitals, and enters largely into private practice. Only 3964 lbs. of quinine were imported in 1880-81, as against 7409 lbs. in 1879-80.

Sati.—The efforts of the British to suppress barbarities and crimes have been continuous and successful. Animal sacrifices have decreased; slavery everywhere abolished, and devil-worship largely discouraged.

According to the Abbé Dubois (p. 198), a sati was extremely rare in the south of the Peninsula. During the rule of the Brahman Peshwas, they were of not unfrequent occurrence in the Mahratta territories; and, so late as the year 1835, on the death of Kurun Singh, raja of Ahmadnagar, his widow was forcibly made a sati, at midnight, in defiance of all the exertions of the Political Officer, Mr. Erskine, backed by a small body of troops, who were fired upon and their officer wounded. But now, sati, the voluntary, or at times forcible,

immolation of the Hindu widow, has ceased; only rare instances occur of the samadh, or burying alive of lepers or others with incurable diseases; self-immolation beneath the wheels of the Jaganath car are rare; the ghāt murders, at one time so common amongst the Hindus, are almost unheard of. Until the middle of the 19th century, human sacrifices occurred amongst the Kandh and the Gond; and instances do still occur, from time to time, amongst the semi-barbarous tribes on the north-eastern frontier, and even amongst fanatic Hindus of the saiva sect, but the criminals are readily detected and punished; the charkh puja, or swinging festival, has been put down, thuggee has been rooted out, and dacoity is only heard of when scarcity prevails.

In the suppression of sati all the native princes have imitated the British.

In 1850 an Act was passed declaring that change of religion should not involve a loss of property or civil rights. In 1856 an Act legalized the remarriage of Hindu widows. In 1870 (Act viii. 18th March), infanticide was declared criminal.

All through the 19th century the British have striven to prevent infanticide. The sacrifice of children at Saugor was prohibited on the 20th August 1802, and the poisoning of infant girls has been largely checked, though still practised. The relative numbers of the sexes returned in the census of 1871 varied greatly. Excluding Rajputana, which did not furnish a sex return, generally, throughout India, there was an excess of males, in a population of 241,535,698, of 5,094,956. Considerably more than half of this disproportion appears on the face of the returns of the North-Western Provinces and the Panjab. In the North-Western Provinces, females were less than the males by 1,382,000, in a population of about 32½ millions; and in Oudh, in a population of nearly 11½ millions, the females were returned less by 314,000.

In the British districts of the Bombay Presidency, with about 14 millions of inhabitants, the females were 351,000 in excess; but in Sind and the Native States, with a population of 7 millions, the females were 218,000 fewer than the males. In Bengal the females, in a population of nearly 69 millions, were about 380,000 in excess. In Assam, in a population of something over 4½ millions, the females were less than the males by about 116,000. In Madras, with a population of nearly 31 millions, the females show a preponderance in numbers of 355,000. Several of the Rajput races have a disinclination to state the number of the female members of their families, and men are attracted to the great centres of trade, as to the presidency towns, or to new territories, as Assam or Burma; but infanticide and neglect of girls' healths are supposed to be the causes of these differences.

BRITTANT-PATTA. HIND. The record of a decision given by a panchayat.—*Elliot*.

BROA. HIND. Rhododendron arboreum.

BROACH, Bharuch, or Baroach, a populous commercial town on the right bank of the Nerbadda, 27 miles in direct distance from the bar. The Nerbadda is here two miles broad, and boats of 50 tons come up the channel. It gives its name to a district lying between lat. 21° 26' and 22° 17' N., and long. 72° 32' and 73° 11' E., with an area of 1458 sq. miles, and a population of 360,322 in 1872. The Hindus, 277,032 in number, are

divided into 142 distinct castes, and these again into numerous subdivisions, whose customs and modes of life are the same, but who are socially separate. The Mahomedans of the Borah (Vohara), Memon, and Khoja sects are numerous; and other converts from Hinduism are the Molislami (formerly Rajputs), Malik, Momina, and Shaikhdas, all but the Borah in a depressed condition. The cultivators are Borah, Koli, Kunbi, and Rajput; the last are a quiet agricultural race. The aboriginal races are Koli, Talavia, Talwada, and Bhil. Baroach town has 36,932 inhabitants. It has a Panjrapol, or hospital for animals. From ancient times it has been an important commercial site, known in the first century of the Christian era as Barugaza, a name said to be from the sage Bhrigu, who founded it, and named it Bhrigupur. It has since been held by many dynasties, Rajput, Mahomedan, and, since November 1772, by the British. It was twice (1536, 1546) sacked by the Portuguese. Bombay has since attracted many of its people, and the Bhargao Brahmans claim descent from Bhrigu.—*Imp. Gaz.*

BROADBILL, birds of the genera *psarisomus* and *serilophus* and family *eurylaimidæ*.

BROCADE, Kimkhab.

Brocade,	DUT.	Intalas; Kimxa, MALAY.
Brokal,	GER.	Sandus,
Luppa; Kimkhab,	HIND.	Parstcha,
Broccalo,	IT.	Broccado,

A fabric composed of satin, striped or purpled with gold or silver, manufactured at Surat, Benares, and Ahinadabad. The looms are very simple in their construction. The gold and silver pass through many hands before they are formed into thread. Brocades (Kimkhab), gold-woven scarves (dopatta), and silks are consigned from Benares, together with a kind of yellow silk dhoti called pitambar, and a dark-blue silk with white spots called bund, also the silk sari or scarves, exclusively for women's wear, forming both a skirt and a scarf.—*Faulkner; McCulloch; Taylor.*

BROCCOLI, a variety of the *Brassica oleracea*.

BROMELIACEÆ, the pine-apple tribe or bromel worts, a natural order of herbaceous plants, remarkable for the hardness and dryness of their foliage. The pine-apple, *Ananas sativus*, belongs to this; also the genera *Bromelia*, *Billbergia*, *Pitcairnia*, and *Tillandsia*.

BROMICOLLA ALEUTICA, a sea-wood of the Aleutian islands, used as food.

BRONONG, MALAY. Baskets.

BRONZE.

Stuck-gold,	DUT.	Gungsa; gongsa, MALAY.
Stuckmetall,	GER.	Metal de Canones,
Bronzo,	IT.	

An alloy of copper and tin much employed in the arts. See Alloys.

BRONZE LEATHER. Kimsana, HIND.

BROOKE, SIR JAMES, raja of Sarawak, was born in 1803 at Benares. At the age of sixteen he received a commission in the Bengal Infantry, and served in the first war against Burma, where he was severely wounded at the storming of a stockade. He lost his appointment by overstaying his home leave. On the death of his father, he succeeded to a handsome patrimony, and on the 27th of October 1838 his yacht 'The Royalist' quitted England for Sarawak. He found its ruler, Muda Hasan, engaged in the suppression of a rebellion, but with a few volleys from the Euro-

pean guns the insurgents surrendered, and Mr. Brooke was duly installed in the rank of raja of Sarawak, previously promised to him. The newly-acquired territory was swampy, and ill cultivated by the native Dyaks, who varied their occupations as tillers of the land by head-hunting excursions among neighbouring villages. He declared head-hunting a crime punishable by death to the offender, and he suppressed it and piracy. On revisiting Britain, the British Government recognised his position, ordered a man-of-war to take him to the seat of his new settlement, gave him the title of Governor of Labuan, with a salary of £1500 a year, with an extra £500 a year as a consular agent, and afforded him the services of a deputy governor, also on a good salary. He compiled a code of laws, declared trade to be free, all roads to be open, all property inviolable, instituted a current coinage, and rigorously suppressed head-hunting, and marauding expeditions gradually became extinct in the province. He died in 1868.

BROOME, COLONEL ARTHUR, an officer of the Bengal Artillery, author of *History of the Rise and Progress of the Bengal Artillery*.

BROOM GRASS, *Aristida setacea*, Linn.

BROOMS.

Bulnia,	FR.	Escobas; Brozas; Cepillon;
Besen,	GER.	Escobillas,
Jaru,	HIND.	Todapam,
Scope,	IT.	Chiparu,
Metlu,	RUS.	

Articles for sweeping floors, walls, ceilings, etc. They get the name of broom, because first made in Europe from the small branches of the plant of that name. In India they are made of the strong grasses which abound. That in Southern India is the torapum pilloo, broom grass; but vullakamar, the erkoo, bamboo branches, the midrib of date and of coconut and of the *Phoenix sylvestris* leaves, are also used, as likewise are the *Vitex negundo* and *Ferreola buxifolia*.—*Ains. Mat. Med.* p. 145.

BROONGA MALAGUM. TAM. See Oil.

BROU, HIND. *Ulmus campestris*.

BROSIMUM ALICASTRUM. SWZ. The Jamaica bread-nut tree and the B. utile, *Endl.*, the cow tree of the Caraccas, were both introduced into the Calcutta Garden. They have a tenacious gummy milk.—*Voigt*, 29. See Cow Tree.

BROTHER.

Akh,	ARAB.	Fratillo,	IT.
Frère,	FR.	Brádar,	PER.
Bruder,	GER.	Hermano,	SP.
Bhai,	HIND.	Tambi,	TAM.

In eastern countries, this term is applied to relatives not so designated in Europe, as to cousins, also to persons of the same faith, or town, or country, or avocation. These last are supplemented by a class of friends, styled munh-bola-bhai, 'so-called brothers,' common throughout British India. This eastern use of the designation brother has caused difficulties to readers of the Christian Bible. Jude in connection with James, though called (Matthew xiii. 55) the 'brethren of Jesus,' were really his cousins, it being common with the Jews to call the first cousins brethren. They were the sons of Mary, the sister of the mother of Jesus, the wife of Cleophas. In Brittany, at the present day, if two cousins-german be married, the son of one

of these cousins will address the other as 'ma tante,' my aunt; he is her *neveu à la mode de Bretagne*. Amongst all the Mongoloid people of Asia, the Dravida of Southern India, the nations of the Malay family, and among the aborigines of America, the descendants of a common ancestor, if they are of the same generation, give one another the name of brother and sister.—*Milner's Seven Churches of Asia*, p. 47; *Peschel*.

BROTHER-MAKING. With the ancient Greeks, two persons would vow to each other permanent hospitality and protection for themselves and their descendants,—the Greek *ξίσιος*. It is the German *Gast-freund*. This is practised amongst the Bedouins, who take an oath before one or two witnesses. Amongst the Rajput races of India, the women adopt a brother by the gift of a bracelet. The intrinsic value of such pledge is never looked to, nor is it necessary that it should be costly, though it varies with the means and rank of the donor, and may be of flock silk and spangles, or of gold chains and gems. The acceptance of the pledge is by the *katchli* or corset, of simple silk, or satin, or gold brocade and pearls. Colonel Tod was the *Rakhi-band-bhai* of the three queens of Udaipur, Bundi, and Kotah, as also of Chand-Bai, the maiden sister of the Rana, and of many ladies of the chieftains of *rauk*. Though the bracelet may be sent by maidens, it is only on occasions of urgent necessity and danger. The adopted brother may hazard his life in his adopted sister's cause, and yet never receive a mite in reward, for he cannot even see the fair object who, as brother of her adoption, has constituted him her defender.

Hindus take a vow of friendship and mutual support with certain forms, and even in a community little remarkable for faith, it is infamous to break this oath. Part of the ceremony is dividing a *bel* or wood-apple (*Feronia elephantum*), half of which is kept by each party, and from this the compact is called *Bel Bandhar*.

Amongst the Oraon girls, sworn friendships or sister-making occur, called 'Gui,' between two. They each say—*Tu aor main gui jurabi; amren phul lagabi.* Then each plucks flowers and arranges them neatly in the other's hair; they exchange necklaces, embrace, and give a joint feast. When two Karen wish to become brothers, one kills a fowl, cutting off its beak, and rubbing the blood on the front of the other's legs, sticking on them some of the feathers. The augury of the fowl's bones is then consulted, and if favourable, the ceremony is repeated by the other party. If the omens be still auspicious, they say, 'We will be brothers (*doh*), we will grow old together, we will visit each other.' Brotherhood amongst the Burmese is termed *doh*, also *thway thouk*, blood-drinker, because they mix a few drops of blood from the arms of the contracting parties with water, and drink it. The following forms were observed, near the eastern frontier of the Akyab district, on the occasion of the reconciliation of two clans or villages of the Chin (or Khyeng) tribe, named Bainbah and Mantin, between whom a blood-feud had previously existed. At the foot of a Nyoung Bin, supposed to be the residence of a 'Nat,' a pot of *khoun* was placed half-buried in the earth. In the orifice of the pot some fresh leaves of the tree were placed, and through them, into the

liquor, were thrust two pipes to suck with, a gun, a spear, a *dah*, alligators' teeth, tigers' tusks, and some bamboo sticks with notches, cuts, and splits of a mystic character. This being ready, one of the oldest of the *Toungmin* (hill chief) present killed a small pig, extracted its heart, and, filling the pot with water, commenced a harangue invoking the 'Nat' to pour down his wrath on the two Mantin and Bainbah men sitting by the pot, and cause their destruction by any of the ways indicated by the different articles thrust into the pot, if they bore each other ill-will, and did not remain friends thenceforth and for ever. This invocation being over, the Mantin took up the pig's heart, and, pressing a drop of blood from it into the liquor, the two men exchanged words, and commenced sucking up the liquor, adding more water. After them, two other representatives of the two villages had a suck, and then the different implements, etc. were removed, and all the other Chins present began drinking (by suction) out of the same pot, and another one supplied for general use. Some war dances were performed, and the Chins then cooked the pig, ate, drank, and were merry. The *khoun* pots were filled with fermented rice, to which water was added as required. The oath thus administered is said to be most binding on Chins, and, once taken, seldom if ever violated. Bin is the Burmese for tree. Nyoung includes a large number of the *scus* tribe. Nat is the Burmese word used to translate the Indian *Deva*. Originally it denotes a local divinity, often a *Hamadryad*. *Khoun* is a kind of rice-beer made and used by the hill tribes all over Burma.

Mr. Burns thus related the ceremony of brother-making among the Kyans:—Singuding sent on board to request me to become his brother according to Kyan fashion. The ceremony is called by the Kyans *Ber-biang*, by the Borneans *Bersahibah*. I landed with our *nakodah*, and, after some preliminary talk to allow the crowd to assemble, the affair commenced; we sat in the verandah of a long house, surrounded by some hundreds of men, women, and children, all looking eagerly at the white stranger who was about to enter their tribe. Stripping my left arm, Kum Lia took a small piece of wood, shaped like a knife blade, and, slightly piercing the skin, brought blood to the surface, which he carefully scraped off; then *nakodah* *Gadore* drew blood in the same way from Singuding's right arm, the one next me, and a small cigarette being produced, the blood on the wooden blades was spread on the tobacco,—scarcely spread, for the quantity was as small as could be imagined. A chief then rose, and, walking to a sort of window, looked full upon the river, and invoked the spirits of good and evil to be witness of this tie of brotherhood; the cigarette was then lighted, and each of us took several puffs, and the ceremony was over.

In Hindu marriages, one of the necessary forms is for the bridegroom to place the bride's foot successively on seven lines drawn on rice in a platter. From this has been adopted the practice of any two persons pledging mutual friendship by taking seven steps, *Saptapathi*, together; and the term *Saptapathinam* has come to signify friendship.—*Elphinstone*, p. 193; *Tod's Travels*; *Jour. Indian Archipelago*, v. No. 12; *Forbes*, 290. See *Sabat*.

BROTO. BENG. A vow; a self-imposed devotional exercise.

BROUGHTON, GABRIEL, surgeon of the ship *Hopewell*, in 1636 was able to obtain the cession of Balasore to the East India Company. In that year he cured the daughter of the Emperor of India, who had been burned by her clothes taking fire, and in 1640 he successfully treated a lady of the emperor's zenana. When asked to name his own reward, he replied that he wished nothing for himself, but begged that his countrymen might be allowed to have a maritime settlement in Bengal. Accordingly, in 1642, a land factory at Hugli, and a maritime settlement at Balasore, were formed. Balasore was at once fortified, and became the key to the position which the British have since acquired in India.—*Imp. Gaz.*

BROUGHTON, LIEUT.-COL. T. D., author of *Specimens of the Popular Poetry of the Hindoos*.

BROUSSONETIA PAPYRIFERA. *Vent.*

<i>Morus papyrifera</i> , <i>Linn.</i>	<i>Papyrus Japonica</i> , <i>Lam.</i>
Mahlaing, . . . BURM.	Paper Mulberry, . . ENO.
Killia, . . . CELEBES.	Gluga, . . . JAV.
Che, . . . CHIN.	

This is a shrub or small tree, with soft, brittle, woolly branches, and large hairy rough leaves, either heart-shaped and undivided, or cut into deep irregular lobes. It is a native of the isles of the Southern Ocean, as well as of China and of Japan, but has been introduced into the Indian gardens. In Tahiti or Otaheite, and other islands, they make tapa cloth of its bark; and it is said that the finest and whitest cloth and mantles worn by the principal people at Otaheite and in the Sandwich Islands were made of the bark, and this when dyed red takes a good colour. For the purposes of making cloth it is not allowed to become higher than about 12 feet, and about one inch in diameter. The bark, taken off in as long strips as possible, is steeped in water, scraped with a chank shell, and then macerated. In this state it is placed on a log of wood, and beaten with a mallet, three sides of which have longitudinal grooves, and the fourth a plain surface. Two strips of tapa are always beaten into one, with the view of strengthening the fibres, an operation increasing the width of the cloth at the expense of its length. Most of the cloth worn is pure white, being bleached in the sun; but printed tapa is also, though not so frequently, seen, whilst that used for curtains is always coloured. The chief dye employed is the juice of *Aleurites triloba*.

In Japan, they are said to cultivate this plant much as osiers are cultivated in Europe. There, for paper, the young shoots, being cut down in December, after the leaves have fallen, are then cut into good long pieces, and are boiled until the separation of the bark displays the naked wood, from which it is then easily separable with the aid of a longitudinal incision. In order to make paper, dried bark is soaked for a few hours in water, after which the outer cuticle and the internal green layer are scraped off. The stronger and firmer pieces are separated from the youngest shoots, which are of inferior quality. The selected bark is boiled in a ley of wood-ashes till the fibres can be separated by a touch of the finger. The pulp so produced is then agitated in water till it resembles tufts of tow. If not sufficiently washed, the paper will be coarse, but strong; if too much

boiled, it will be weaker, but white. It is then beaten on a table, with batons of hard wood, into a pulp. Mucilage obtained from boiled rice, or from a plant called *oreni*, is added to the pulp. These three are stirred with a clean reed till reduced into a homogeneous liquor, and when of a due consistence are ready for conversion into sheets of paper.—*Dr. Seeman, Viti; Voigt.*

BROWN BEAR, *Ursus Isabellinus*. The white bear, *Ursus arctos*; Syrian bear, *U. Syriacus*; Himalayan bear, *U. Tibetanus*; Japanese bear, *U. Japonicus*; Malayan bear, *Ursus Malayanus*; Sloth bear, *Ursus labiatus*.

BROWN BUG or *Scaly Bug*, *Lecanium coffeæ*.

BROWN HEMP, the commercial name given in Bombay to the fibres of the *Hibiscus cannabinus*. It is the Ambaree or Mesta-pat of Bengal, and the Palungoo of Madras, and is also known as Indian hemp and 'hemp.' See *Ambaree*.

BROWN JAWARI. ANGLO-HIND. *Sorghum vulgare*, *var.*

BROWN RAT, *Mus decumanus*.

B'R PUKHTUN, the language of the Afghan people about Kabul, Kandahar, Shorawak, and Pishin. See *Afghan*; *India*; *L'r Pukhtun*.

BRUCE (JAMES), Author of *Travels to Discover the Source of the Nile* in 1768-73.

BRUCEA ANTIDYSENTERICA is considered by the Woginoos of Abyssinia a most valuable remedy in dysentery and severe cases of diarrhoea. The false angustura bark was long supposed to be the produce of this *Brucea*, and its active principle was accordingly named *Brucine*. It is now, however, established that the false angustura bark is that of the *Strychnos nux vomica*, the Kuchila tree of Bengal.—*O'Sh. p. 626.*

BRUCEA SUMATRANA. *Roxb. Fl. I. i. 449.*

Genus amarissimum, Lour.

Ampadoo Barrowing, MAL. | Lussa Raja, . AMBOYNA.

A plant of Assam, Cochin-China, Sumatra, and Moluccas, and has been successfully grown in the Botanic Garden of Calcutta. The leaves are intensely bitter, and possess the same medicinal properties as the *Brucea antidysenterica*.—*Christison, Dispensatory; Don, Gardener's Dictionary; Engl. Cyc. p. 671; Voigt, 185; O'Sh. p. 226.*

BRUCHUS. Two species of this genus of insects attack the poppy seed when stored.

BRUCK, COMMODORE, Indian navy. His report on the Persian Gulf enumerates as articles of trade, —silk, dried fruits, gums, dates, horses, pearls, and spices, to the amount of 60 or 80 lakhs annually. In 1820 he commenced the survey of the Persian Gulf, followed by Captain Haines, I.N., and by Lieuts. Constable and Stiffe in 1860.

BRUGH. HIND. *Echinops nivea*.

BRUGPA. See *Dalai Lama*; *Hung-Kiao*; *Tibet*.

BRUGUIERA PARVIFLORA. *W. and A.*

Rhizophora parviflora, *R.* | *R. cylindrica*, *Roxb.*

Pyu, Soung, . . BURM. | Uravada, Varavada, TEL.

This mangrove grows in the Moluccas, Sumatra, Cochin-China, the Malay Islands, in both the Indian Peninsulas, the Khassya mountains, Nepal, Orissa, Jellalore. It has small green and scented flowers. Berries dye black.—*Voigt; Elliot, Fl. Andhrica.*

BRUGUIERA RHEEDII. *L'Herit.*

B. gymnorrhiza, *Lam.*

Rhizophora gymnorrh., *L.* Kankra, . . . BENG. | Pyu, Soung, . . BURM.

This species of mangrove is abundant all along the eastern coast of the Bay of Bengal, and it furnishes a hard and durable yellowish timber. The tree is easily distinguished from its associates, for it drops no roots from its branches, but the trunk is divided into numerous roots for half its height, like a small bamboo pavilion. It grows in Cochín-China, the Moluccas, Java, Tenasserim, Penang, the Sunderbuns, and in Malabar. Burmese apply the names Pyu and Soung to *B. Rheedii*, *B. eriopetala*, and *B. parviflora*.—*Mason*; *Voigt*, 41.

BRUH of Sumatra, species of *Macacus*, Bruh putik, Bruh sepotong, and Bruh-sclapi, are *Macacus nemestrinus*, *Linn.*

BRUM BRUM. HIND. *Hedera helix*.

BRUMER ISLAND. The mode of salutation or expression of friendship amongst these islanders consists in first touching the nose with the forefinger and thumb of one hand, and then pinching the skin on each side of the navel with the other, calling out at the same time, Magásuga! This habit resembles on one hand that of rubbing noses, so general in Polynesia, and, on the other, the custom of pinching the navel and repeating the name for that part, practised by the islanders of Torres Strait.—*Macgillivray's Voyage*, i. p. 258.

BRUMIJ. HIND. *Celtis Caucasia*, *Echinops nivæa*.

BRUMO or Dumo. TIBET. The yak cow.

BRUNEL, the capital of Borneo, and the seat of government. Its houses are built on piles in the river, and its population 20,000 souls. Communication by boats.

BRUSH KANGAROO is *Macropus cœruleus*. The tail and loins are the best for food.

BRUSH TURKEYS of Australia, the *Talegalla lathami*, are of the *Megapodidae* family, all of which hatch their eggs by the natural heat arising in a mound about 4 feet high, which they construct of vegetable materials, earth and sand. The male bird closely watches the temperature of the mound. The young bird leaves the nest on the second day, and on the third day can fly strongly.

BRYACEÆ, the moss tribe of plants, comprising many Indian genera, *calymperes*, *dicranum*, *diplomolax*, *grimmiu*, *gymnostomum*, *orthodon*, *orthotrichum*, *schlotheimia*, *syrrhopodon*, and *zygodon*.

BRYONIA, *sp.*, *bryonia*.

Tien-hwa-fen, . . . CHIN. | Tien-kwa, . . . CHN.
Peh-yoh, . . . " |

Grows in Kiang-su, Honan, and other places in China.—*Smith*.

BRYONIA LACINIOSA. *Linn.*

Mala, BENG. | Nehoe-maka, . . . MALEAL.
Gurga-naru, . . . HIND. | Linga donda, . . . TEL.

A creeper growing all over India.—*Rorb.*

BRYONIA UMBELLATA. *Willd.*

Gwal kakri, . . . HIND. | Mohakri, HIND.

Not uncommon in the N.W. Himalaya at from 2500 to 7500 feet. The fruit is eaten, and on the Sutlej the root is said to be given for spermatorrhœa.—*Dr. J. L. Stewart, M.D.*

BRYOPHYLLUM CALYCINUM.

Ywet kya pen pouk, . . . BURM.

This curious flowering plant, with a leaf like the house-leek, was introduced into India by Lady Clive from the Moluccas, and has been so naturalized on the Tenasserim coast, that it may be

sometimes seen growing around old pagodas like a wild plant. The leaves readily produce buds upon their margins, capable of propagating the plant when laid upon damp soil. This marginal production of leaf-buds has been considered analogous to the development of seed-buds (ovules), which in plants generally are also normally marginal, being developed upon the margin of specially modified leaves (carpels).—*Mason*.

B'STAN-HGYUR is a compilation in Tibetan of all sorts of literary works, about 3900 in number, in 225 volumes, written mostly by ancient Indian pandits and some learned Tibetans in the first centuries after the introduction of Buddhism into Tibet. The Rgyud portion is on religious rituals and ceremonies, and the Mdo part on science and literature.—*Csona Korosi in As. Res.*; *Weber*, 209.

BTSOD. TIB. Madder.

BUA or Buah. MALAY. Fruit. Bua angur, the grape; Bua dulima, pomegranate; Bua lontar, palmyra fruit; Bua minyak, olive oil; Bua nanka, jack-fruit; Bua pala, nutmeg, the *Myristica mosehata*; Bua-rucum, *Carissa spinarum*. Bua-kaia-pet, a tree in Bawean which reaches a height of thirty feet, and when covered with its branches of deep red-coloured fruit, it presents a beautiful appearance; the fruit is milky, has an agreeable flavour, and some resemblance to the Sawo fruit.

BU-ALI-SINA, or Avicenna, a celebrated physician; his name was Abu Ali-ul-Husain, ibn Abid Ullah ibn Sina, q.v.

BUBAK, a small town in the Kurachee district, of 5703 inhabitants. The Mahomedan sections are Korichaki, Jamot, and Machi.—*Imp. Gaz.*

BUBALUS, *H. Smith*, a genus of mammals of sub-family Bovinæ; the horns are large, attached to the highest line of the frontals, inclining upwards and backwards: ribs, 13 pairs.

BUBALUS ARNI, the wild buffalo.

<i>Bos arni</i> , <i>Kerr, Shaw.</i>	| <i>B. bubalus</i> , <i>Auct.</i> , wild var.
<i>B. buffelus</i> , <i>Blyth.</i>	
Arna (male), Arni (fem.),	| Mung of . . . BHAGULPUR.
HIND.	| Gera erumi, . . . GOND.
Jangli bhyus, . . . "	

The wild buffalo is found in Assam, in the swampy Terai at the foot of the hills from Bhutan to Oudh, also in the plains of Lower Bengal as far west as Tirlhut, but increasing in numbers to the eastwards, on the Brahmaputra and in the Bengal sundarbuns. It also occurs here and there through the eastern portions of the table-land of Central India, from Midnapur to Raipur, and thence extending south nearly to the Godavery; a few are found in the north and north-east of Ceylon. They adhere to the most swampy sites, and never ascend the mountains. Length, 10½ feet and upwards from snout to root of tail; height at shoulder, 6½ feet; tail short. The horns are of two kinds, the one very long, nearly straight, well thrown back, var. *Macrocerus* of Hodgson, the other much shorter and well curved, more directed upwards, *Spirocerus*, *Hodgs.*; the horn reaches to 6½ feet in length. It lives in large herds; but in the rutting season in autumn the most lusty males lead off a few females and form small herds for the time. It gestates 10 months. The bull is of such power and vigour, as by its charge frequently to prostrate a well-sized elephant. They are uniformly in high condition, while the domestic buffalo is lean and angular.—*Jerdon, Mammals*, p. 308.

BUBBE-MARA. CAN. *Calophyllum calaba*.

BUBHAJIA. See Mishmi.

RUBLEE. SIND. *Acacia farnesiana*.

BUBO, a genus of birds of the tribe Nocturnæ, family Strigidae, order Raptores, or birds of prey. They are arranged in the sub-fam. Buboninæ, viz. Nyctea, Bubo, Asio, Scops, Ketupa. *Bubo maximus* is the 'eagle owl' of Europe, Siberia, China, Asia Minor, Babylonia, Barberry, Himalaya? See Birds.

BUBUK. MALAY. Wormwood.

BUCCINIDÆ, a family of recent and fossil molluscs, comprising many genera and sub-genera.

BUCEPHALIA, a town built by Alexander, supposed to have been on the site now occupied by the town of Jhelum. It was named after his horse, which was killed in battle here. See Porus.

BUCEROTIDÆ, the hornbill family of birds, distinguished by the enormous size of their bills, and many with a casque or protuberance at the base of the bill on the culmen. The genera and species in S.E. Asia are—

Homraia bicornis, Linn., Peninsula of India.

Buceros rhinoceros, Linn., Malay Peninsula.

B. lunatus, T., Java.

B. Tickelli, Blyth, Tenasserim.

B. hydrocorax, Linn., Moluccas.

B. galeatus, Auctor.

Hydrocissa coronata, Bodl., Malabar.

H. albirostris, Shaw, Bengal.

H. affinis, Hutton, Dehra.

H. connexa, Tem., Malacca, Java.

H. Malayana, Tem., Malacca, Java.

H. nigrostris, Tem., Malacca, Java.

Meniceros bicornis, Scop., all India.

Tockus Gingulensis, Shaw, Malabar, Ceylon.

Aceros Nipalensis, Hodgk., S.E. Himalaya.

Rhyticeros rufoollis, T., Burma, Malacca.

R. subrufoollis, Blyth, Burma, Malacca.

R. plicatus, Latham, Burma, Malacca.

Callao cassidex, Bon.

C. sulcatus, Bon.

C. corrugatus, Bon.

Rhinoplax galeatus.

And others.

—Jerdon, i. 248-50.

BUCH. BENG. Zingiber zerumbet; DUK., sweet flag, *Acorus calamus*.

BUCHANAKA. SANSK. *Arachis hypogea*.

BUCHANAN, DR. FRANCIS, a medical officer of the Bengal army, who afterwards added the surname of Hamilton. In 1800 and 1801, made a 'Journey from Madras through the countries of Mysore, Canara, and Malabar,' under the orders of the Marquis of Wellesley, investigating the state of agriculture, arts, and commerce, and his report was printed. He introduced into his Commentary upon Rheede's Hortus Malabaricus, published in the Linnean Society's Transactions, vols. xiii., xiv., and xv., descriptions of several new peninsular species. His writings are—An Account of Nepaul, Edinburgh, 1819, 1 vol.; Travels through Mysore, Canara, and Malabar, Lond. 1807, 3 vols.; Geographical and Statistical Description of Dinapore, Calcutta, 1833, 1 vol.; Fishes of the Ganges, Edin. 1822; On a map of Burma in Jameson's Journal.

For his Mysore journey he set out on the 23d of April 1800, and completed it on the 6th July 1801. The first edition appeared in 1807. It is an almost unique encyclopædia, and how one man, however indefatigable, could have produced, in so short a space of time, such a mass of reliable information about a country in which he was a stranger, is indeed astonishing. His survey of

the north-eastern districts of Bengal, 1807-1813, are still in MS. in the India Office. Mr. Montgomery Martin, in 1838, printed from them three volumes of History, Antiquities, Topography of Eastern India.—*Luist's Catal.*; *Imp. Gaz.*

BUCHANANIA LATIFOLIA. Roxb.

Chirongia sapida, Buch. ? | *Spondias elliptica*, Rotil.

Piyala? BENG. Char, Dhan, PANJ, MAHR.

Thit-sai? Len-Iwon, BURM. Chara, SANSK.

Lumbo, Aima, TAM.

Noas kool, Nuskul, CAN. Morada, Mowda,

Pia-Sal, GUJ. Chara-chettu, TEL.

Pyal, Piar cheronji, HIND. Chara pappu,

Chironji, Charoli, Charu-mamidi,

This is a straight-growing, handsome, large forest tree, with fragrant flowers, common for some distance west of the Jumna, in the lower hills. It grows in Ajmir, Panjab, and Garhwal. In the Bombay Presidency, is found more inland than in the coast jungles. In Canara and Sunda it is most frequent above the ghats, particularly north of Dandellee, and the wood is rather strong and tough, but seldom squaring above four inches. The tree abounds in Mysore and Cuddapah; in Cuttack is worked up generally into furniture, house doors, windows, presses, tables, etc. It requires to be polished, otherwise it stains of a burnt-sienna colour any cloth brought into contact with it. Brandis says that in Burma it is a soft, light wood, and not used. The fruit, when ripe, in May is gathered, then soaked in water to soften the outer pulp, when it is washed and rubbed off by the hands; the little nut is then dried in the sun, and afterwards broken between a common chuckee or stone hand-mill, such as is used for grinding wheat; the kernels are then shifted and winnowed, and much used in native confectionery, roasted and eaten with milk, and considered a great delicacy. They abound in a straw-coloured, sweet-tasted and limpid oil, which is seldom extracted. Its bark is used by tanners. In Hindu poetry, its handsome white flower furnishes a simile for pretty eyes, and is held to be sacred to Vishnu.—*Madras Exhibition*; *Eng. Cyc.*; *Drs. Roxb.*, *Gibson*, *Voigt*, *Brandis*, *Irvine*, *Mason*; *Cal. Cat. of 1862*; *Useful Plants*; *Flor. Andh.*; *Powell*, p. 570; *Mr. Thomson*; *Beddome*.

BUCHANANIA VARIEGATA, the Kachnar of Chutia Nagpur, a tree with hard, whitish yellow timber.—*Cal. Cat. Ex.* 1862.

BUCHGOTI, a Rajput tribe in Jonpur and Gorakhpur, formerly notorious for turbulence; part of them became Mahomedans prior to Sikander Lodi's rule. The Bilk-huria, the Rajwar, the Rajkumar, are offshoots from the Buchgoti.—*Elliot*.

BUCKCHI. HIND. Fleabane; *Conyza sp.*

BUCKHANI. See Clothing.

BUCKINGHAM, JAMES SILK, editor of a newspaper in Calcutta. He urged freedom for the press, but was ultimately deported from India, and travelled in Western Asia. He published his travels.

BUCKLALI. HIND.? A close straight-grained wood, light, tough, and strong; grows sparse in the Santal jungles. Is suitable for timber bridges.—*Cal. Eng. Jour.* 1860.

BUCKLANDIA POPULNEA, R. Brown, a beautiful evergreen of the Sikkim Himalaya. One seen by Dr. Hooker had a trunk 2½ feet in girth, and was unbranched for forty feet. Ferns and the beautiful air-plant *Cologyne Wallichii*,

with other orchids, grew on its branches, while clematis and Stauntonia climbed the trunk. Its wood is brown, and not valuable as timber. It is also interesting in a physiological point of view, from the woody fibre being studded with those curious microscopic discs so characteristic of pines, and which, when occurring on fossil wood, are considered conclusive as to the natural family to which such woods belong. The whole natural order to which *Bucklandia* belongs, possesses this character, as also various species of *Magnoliaceæ* found in India, Australia, Borneo, and South America. *B. populnea*, *R. Brown*, is a large tree of the Khassya mountains from Cherrapunji to Sarureen. Flowers small and greenish.—*Hooker, Jour.* ii. p. 185; *Voigt*, 53.

BUCKLAT-ul-MALIK. ARAB. *Fumaria officinalis*, fumitory. Bucklat-ul-Mubarik, *Portulaca quadrifida*.

BUCKTHORN or *Rhamnaceæ* order of plants, comprising the genera, *zizyphus*, *berchemia*, *sageretia*, *ventilago*, *rhamnus*, *scutia*, *hovenia*, *colubrina*, *vitmaunia*, and *gouania*. The dried red crushed drupes, both of *rhamnus* and *zizyphus*, are sold in the shops of China, under the name of *Tsau-pi* and *Nan-tsau*. The fruit of the *Swan-tsau*, a species of Chinese *rhamnus*, is purgative and deobstruent. The kernels of *R. saporifer* are sedative. The bark of a species of *rhamnus* is brought from Cheh-kiang, and is used to form a beautiful green dye.—*Smith*.

BUCKUM. HIND. *Pterocarpus santalinus*.

BUCKWHEAT, *Fagopyrum*, *sp.*

Phulan, . . .	CHENAB.	Truo, Rjao, . . .	LADAKH.
Darau, . . .		Japu Drawodo, . . .	PANJ.
Kiau-meh, . . .	CHIN.	Tatarca, Gryka, . . .	POL.
Suh, . . .		Obal, Phapara, . . .	RAVI.
Blé Sarasin, Blé Noir, "Fr.		Katu, Katu trao, . . .	"RUS.
Buchweizen, . . .	GER.	Gretschka, . . .	"RUS.
Heide Korn, . . .		Trigo, Trigo Negro, SPAN.	
Grano Saraceno, . . .	IR.	Ogal, Ulgo, Phapar, SUT.	
Faggina, Fraina, . . .		Brau, Bres, Karma bres, ,,	
Trumba, Kala, KASHMIR.		Tanbri, . . .	

Fagopyrum emarginatum, *Meissn.*, and *F. esculentum*, *Manch*, both known as buckwheat, are cultivated abundantly in Central Asia and the Himalaya, at about 6000 feet on the Jhelum, 5000 to 10,000 on the Chenab, and on the Ravi 8000 to 9000. Dr. Thomson saw it at 13,000 feet in Zaskar, and Drs. Stewart and Cayley at 13,000 and 14,000 feet in Ladakh. Bears more food of this when growing than of any other food; the leaves are much used in Lahul as a pot-herb. In the hills, the buckwheat grain is considered inferior to millet, but much is taken to the plains, where it is used by the Hindus on their 'bart' or fast days, it being then 'phalahar,' or lawful. In the neighbourhood of Hankow in China, the crop of *F. esculentum* is much depended on; its small grain is very sweet and oily, and makes very nourishing food and pastry. The crop is cut before the frost. It is believed to be a native of Central Asia, and is supposed to have been first brought to Europe in the early part of the twelfth century, at the time of the crusades for the recovery of Syria from the dominion of the Saracens. In America, 30 to 60 bushels per acre are not unfrequently produced. The quantity of seed sown is 5 to 8 pecks the acre.—*Simmonds*, p. 259; *Dr. J. L. Stewart*; *M'Culloch*; *Smith*, p. 44.

BUD. PERS., HIND. Existence. Bud-o-bash, livelihood. Bud-nabood, life and death.

BUD. HIND. *Malacochæte pectinata*.

BUDA or Budh. In Hindu astronomy, the planet Mercury. Budada, Budwar, Wednesday.

BUDADI GUMADI. TEL. *Benincasa cerifera*.

BUDAGA or Badaga, a race on the Neilgherry hills, known as Budaga or Burghers; they speak an ancient dialect of the Canaræe. See Badaga.

BUDAMA PANDU. TEL. *Bryonia*, *sp.*; *Cucumis*, *sp.*

BUDA-MARA. TEL. *Grewia salvifolia*, *Heyne*.

BUDAMI. HIND. *Terminalia catappa*.

BUD-ANAR, of Kangra. *Marlea begonifolia*.

BUDAON or Budaun, an ancient city on the bank of the river Sat, in the N.W. Provinces of India, in lat. 28° 2' 30" N., and long. 79° 9' 45" E. The Budaon district is bounded on the west by the Gangea, has an area of 2004 square miles, and a population of 934,348. Besides Hindu castes, the Ahir graziers on the Bhur tract are 81,522; Chamar landless cultivators, 133,528; Kayasth, 9726; Kurmi, 6143. The Bantu, ostensibly beggars, are a predatory thieving tribe moving in gangs; the Haburah, also in thieving gangs. The Sansia are vagrants professing Mahomedanism; they cross over from the Doab and steal children. The district was Ahir territory; from the 11th to the 19th century it was under the Mahomedan dynasties of Delhi and Oudh, and since 1801 it passed to the British.—*Imp. Gaz.*

BUDAR. HIND. *Picea Webbiana*.

BUDARENI. TEL. *Capparis divaricata*.

BUDARI. CAN. *Antelope Arabica*, *Ell.*; *Gazella Bennetti*, *Jerdon*.

BUDDA BASARA. TEL. *Physalis Peruviana*, *L.*; also *Cardiospermum halicacabum*. Both have bladder capsules.

BUDDAH MANJI, also Manjiharam, a village deity of the Santal; a stone buried in the centre of the village in an open shed. The shed is called Buddhathan. See Ho; Santal.

BUDDA-NEDI. TEL. *Careya arborea*.

BUD-DA-TIA-RA-NA. BURM. *Canna Indica*.

BUDDA TUMMA. TEL. *Aecia Roxburghii*.

BUDDERI. SANSK. *Zizyphus jujuba*.

BUDDHA. This title is usually employed to designate the eminent religious teacher, from whose doctrines have sprung up the forms of the Buddhist religion which are found prevailing in Ceylon, Nepal, Tibet, Tartary, Mongolia, Burma, Siam, Anam, Cambodia, China, Japan, Formosa, and Corea. Its votaries, it is supposed, outnumber those of all other creeds, except the Christian. The Rev. Mr. Hardy quotes a German estimate of the Buddhists at 369 millions; Major Cunningham has 222 millions, and even 500 millions have been estimated.

Buddha in Sanskrit means wisdom, supreme intelligence, and the words of nearly similar sound are mere varieties, in different parts of the East Indies, in orthography and pronunciation. The Chinese having no B or D in their alphabet, and their language being monosyllabic, they have further softened this term into Fo, Fo-a, or Fo-Hi; they also call him Sa-ka, a variation of Sakya, his tribal name.

Taking the term in the simple sense of a religious teacher, it is generally admitted that there had been several Buddhas prior to the advent of Sakya Sinha, to whom the term is now restricted by the people of Europe. Sakya Sinha declares he was the twenty-fifth Buddha, and says of another, 'Bhagava Metteyo is yet to come.'

Colonel Tod is of opinion (i. p. 90) that there had been four distinguished Buddha or wise men, teachers in India of a monotheism which they brought from Central Asia, with their science and the arrow or nail-headed written character. The first Buddha he considers was Budh, the parent of the Lunar race, B.C. 2250. The second (twenty-second of the Jains), Naimnath, B.C. 1120. The third (twenty-third of the Jains), Parswanath, B.C. 650. The fourth (twenty-fourth of the Jains), Mahavira, B.C. 533.

Sakya Sinha was born in the 5th or 6th century B.C., at Kapilavastu, in the Gorakhpur district, in the reign of Bimbisara, the fifth of the Sisunaga dynasty of Magadha or Behar. He was the only son of raja Suddhodana, the chief of a tribe called Sakya, whose country lay among the spurs of the Himalaya, along the banks of the Rohini, or modern Kohana. Suddhodana was indeed one of the last representatives of the pure Aryan or Solar dynasties who held sway in Ayodhya, the modern Oudh, and were deposed by the Lunar dynasties of the mixed Aryan and Turanian races, and reduced to mere chieftains of tribes, who still maintained a precarious independence under the protecting shadows of the Himalaya. The Rohini divided the Sakya from the Koliyan on the opposite bank, and in times of famine the river was often the object of fighting between them. But during the rule of Suddhodana there was peace between the clans on either side of the Rohini, and Suddhodana had married two of the daughters of the Koliyan chief. Both continued childless, until, in her 45th year, the elder sister presented her husband with a son, the prince Gautama Siddhartha. Buddhist legends describe the great rejoicing at the unexpected event; that Buddhas from afar came to worship the new-born babe, and aver that his incarnation was voluntary, and his conception immaculate. At 19 years old he was married to his cousin Yasodhara, the daughter of the Koliyan raja; and in the Pali scriptures we hear nothing more of him, until in his 29th year it is related that, one day, driving beyond his pleasure-grounds, he met an old man, and on another a paralytic, and again one suffering from the pest, and after that a corpse. These sights stirred the prince to new thoughts. About this time Yasodhara gave birth to a son, her only child. On hearing of it, Gautama only said, 'This is another strong tie I have to break.' That evening the nautch girls came as usual to dance before him, but he paid no attention to them, and gradually fell asleep. On awaking again at midnight, and seeing them lying about in the ante-room in inelegant postures, an overpowering loathing filled his soul, and he called at once to his charioteer, Channa, to get ready for his departure. He then went to Yasodhara's room, hoping to embrace his new-born boy while she slept, but, fearing that should she awake he would be moved from his resolution, he tore himself from the threshold of her door; and on the night of the full moon of the month of July, B.C. 594, the young Rajput prince went forth into the forests of Magadha, resolved never to return to his father's house, and to his wife and child, until he could come back to them as a teacher. This, in the Buddhist scriptures, is styled 'The Great Renunciation' of Gautama Buddha. He first went to Rajagriha, the capital of Magadha, the residence

of king Bimbisara, where he attached himself to a Brahman named Alara, and afterwards to another named Adraka, by whom he was initiated into all the mysteries of the Hindu religion and philosophy. But not being satisfied, he retired to the jungle of Uruvela, on the north of the Vindhya range, where for six years, attended by five faithful disciples, he gave himself up to the severest asceticism, till his fame filled the whole of Malwa, or Central India, 'like the sound of a great bell hung in the canopy of the skies.' At last one day he fainted from extreme exhaustion, when, recovering, and seeing the folly of such useless self-denial, he thenceforward began to take food regularly, on which his five disciples deserted him and went to Benares. On the very day that they left him, he wandered forth, meditating painfully on their desertion just at the time when he most needed human sympathy, until at last he came to a village on the banks of the Nairanjara, where Sujata, the daughter of one of the villagers, compassionately brought him food as he sat under the Bodhi tree, *Urostigma religiosum*, or sacred fig-tree. He was greatly moved by the compassion of Sujata, and sat meditating under the tree through all the day and all the following night. First he was strongly tempted to give up his missionary life, and return to wife and child, wealth and power, but as the sun set the religious side of his great nature triumphed. His mind was made up to the belief that penances, self-tortures, and sacrifices were not the way of life and peace, but a pure heart; and that the only freedom from doubt and heresy was through overcoming impurity, envy, and hatred. The first enemy that must be conquered is sensuality, and the last self-righteousness; and the crown of purity, faith, and justice, without which all these are no more than self-righteousness, is 'universal charity.' As these truths flashed on his mind, he felt that he had become the Buddha, the Enlightened One, and he arose to proclaim his new-found joy to all the world around him. He first sought out his old teachers, Alara and Adraka, but they were dead. Then he went to his former five disciples at Uruvela, who were now living in the Deer Forest at Benares. As he approached, they determined not to receive him, but Gautama was a man of commanding presence and noble countenance, and had a rich, deep, thrilling voice, and as he drew near and addressed them, all their self-righteous resolutions failed, and in the end they followed him as their true teacher and master. Another of his converts in the Deer Forest was a rich young man named Yasa, who came to him by night out of fear of his relations, and afterwards succeeded in bringing many of his friends and companions into the new religion. He then returned to Uruvela, where he converted three fire-worshippers, one of whom was called Kasypa, and other hermits who were living there, accompanied by whom he proceeded again to the court of king Bimbisara at Magadha. There great numbers joined him, including Sariputra and Moggallana, who afterwards became famous leaders of the new religion. At last, after seven years' absence, Buddha started for Kapilavastu. He entered the city with his mendicant's bowl in his hand, begging through the streets. The old raja Suddhodana was scandalized; but Gautama replied, 'My father, the customs of the Dharma (Law, or

Kingdom, of righteousness) are good, both for this world and the world which is to come. My father, when a man has found a treasure, it is his duty to offer the most precious of the jewels to his father first. Do not delay, let me share with you the treasure I have found.' Yasodhara did not go forth to welcome him. 'I will wait and see,' she said; 'perhaps I am still of some value in his eyes; he may ask for me, and I can better welcome him here.' Gautama, who had not seen her since the night of his renunciation, noticed her absence, and observing that doubtless the princess, knowing that a recluse could not be touched by a woman, had kept away, added, 'She may embrace me; do not stop her. Unless her sorrow be allowed to take its course, her heart will break.' Then he went in to Yasodhara, who, when she saw him whom she had known as a prince standing before her as a yellow-robed hermit, and though she knew it before, for the first time then realized the impassable gulf between them, she fell upon him, and held him by the feet and wept bitterly. Buddha praised her great virtue, and, when she afterwards entered into the new religion, she became the head of the first Buddhist nunnery of female recluses. For 45 years Gautama prosecuted his mission in Hindusthan, attended by his cousin Ananda. He also converted another cousin, Devadatta, who, in envy, incited king Ajatasatru, who had succeeded king Bimbisara in Magadha, against him. But in the end Ajatasatru was also converted. The common people, whose levelling instincts rebelled against the hereditary priesthood and crushing caste system of the Brahmans, joined him in multitudes. He died at the age of 80, B.C. 543. He was journeying towards Kasinagara, 80 miles east of Kapilavastu, and had rested in a grove at Pawa, presented to the new society by a goldsmith named Chunda. Chunda here prepared for him a meal of rice and pork, of which he ate incautiously, and was soon afterwards taken ill. Finding that Chunda was likely to be reproached for his mortal fit of indigestion, he quietly remarked to Ananda, 'After I am gone, tell Chunda he will receive in a future birth a very great reward; for, having eaten of his pork, I am about to pass into Nirvana. These are the gifts which will be blest above all others, namely, Sujata's gift before I attained wisdom under the Bodhi tree, and this gift of Chunda before I enter into the rest of Nirvana.' Afterwards, observing Ananda weeping, he said, 'O Ananda, do not weep. This body of ours contains within itself the powers which renew its strength for a time, but also the causes which lead to its destruction. Is there anything put together which shall not dissolve?' Then, turning to his disciples, he said, 'When I am passed away, and am no longer with you, do not think the Buddha has left you, and is not still in your midst. You have my words, my explanations, my laws, the Buddha has not left you.' And again, 'Beloved disciples, if you love my memory, love one another.' And after another pause he said, 'Beloved, that which causes life causes also decay and death. Never forget this. I called you to tell you this.' These were the last words of Gautama Buddha, as he stretched himself out and died under the great sal tree, the *Shorea robusta*, at Kasinagara.

His body was burnt with great reverence by the

local rajas of Malwa, and his charred bones were distributed over the whole country, and in after times gave rise to the stupas, topes, or relic mounds which have been discovered in so many parts of India, from the valley of the Kābul river to the banks of the Kistna. For gradually the new religion grew mightily. The Sisunaga dynasty, which reigned at Magadha from B.C. 691 to B.C. 325, was followed by the Maurya dynasty, which reigned to B.C. 118. It is the most brilliant and best known of all the dynasties of ancient India. In the anarchy which followed the invasion by Alexander the Great, B.C. 330 (Herat) to 326, the last of the Sisunagas was murdered in revenge by a learned Brahman named Chanakya, through whose intrigues Chandragupta, the Sandracottus of the Greeks, was raised to the throne. His grandson, Asoka, the third king of the Maurya dynasty, established Buddhism as the state religion in India, B.C. 250. He was the first to raise stone architecture in India, the art of which was probably derived through the Greek invasion. He engraved his edicts on rocks and on pillars; and the Sanchi tope, and the tope of Bharhut, are probably remains of the 84,000 topes or stupas he is said to have erected in honour of Gautama Buddha and his most distinguished first disciples. Only eight of these mounds were shrines of actual relics of Sakya Muni himself, and these are distinguished by the name of dhagobas,—being derived from dhatu, a relic, and garbha, the womb,—that is, a 'relic-shrine.'

The legends relate that on his attaining perfect knowledge while resting under the pipal tree near Gaya, he celebrated the event with the stanzas:

'Through various transmigrations
Have I passed, (without discovering)
The builder I seek of the abode (of the passions).
Painful are repeated births!
O house builder! I have seen (thee).
No house shalt thou again build me;
Thy rafters are broken,
Thy ridge-pole is shattered:
My mind is freed (from outward objects),
I have attained the extinction of desires.'

According to tradition, a likeness of this great reformer was carved in sandal-wood from the life, and this became the model for such representations as exist. He appears in them as a smiling, smooth-faced, feminine-looking person, with long hair parted like a woman's, and formed into a knot at the top of the head. In early Buddhist belief, however, statues were not erected to him. There are none belonging to the eastern caves, nor any found at Buddhi Gaya, Bharhut, or Sanchi. There are none executed as early as the Christian era. His statues on the façade at Karli and in the western caves are insertions of the 4th or 5th centuries, or later.

Before the end of his career, he saw his principles zealously and successfully promulgated by his Brahman disciples, Sariputra, Mangalyana, Ananda, and Kasyapa, as well as by the Vaiya Katyayana, and the Sudra Upali. At his death in B.C. 543, his doctrines had been firmly established, and eager claims were preferred by kings and rulers for relics of their teacher. His ashes were distributed amongst eight cities, and the charcoal from the funeral pile was given to a ninth; but the spread of his influence is more clearly shown by the mention of the numerous cities where he lived and preached. Amongst these are Champ-

and Rajagriha on the east, Sravasti and Kausambi on the west. In the short space of forty-five years, this wonderful man succeeded in establishing his doctrines over the fairest districts of the Ganges, from the neighbourhood of Agra and Cawnpur to the Delta. This success was perhaps as much due to the corrupt state of Brahmanism, as to the greater purity and more practical wisdom of his own system. His success was also partly due to the politic admission of women. To most of them the words of Buddha preached comfort in this life, and hope in the next. To the young widow, the neglected wife, and the cast-off mistress, the Buddhist teachers offered an honourable career as nuns. Instead of the daily indignities to which they were subjected by grasping relatives, treacherous husbands, and faithless lords, the most miserable of the sex could now share, although still in a humble way, with the general respect accorded to all who had taken the vows. The Bhikshuni were indebted to Ananda's intercession with Sakya for their admission into the ranks of the Buddha community, and (Csoma's Analysis of the Dulva, Res. As. Soc. Bengal, xx. p. 90; also Fo-kwe-ki, chap. xvi. p. 101), in token of their gratitude, the Pi-khieu-ni, or Bhikshuni, at Mathura, paid their devotions chiefly to the stupa of Anan (Ananda), because he had besought Buddha that he would grant to women the liberty of embracing ascetic life. The observances required from the nuns are given in note 23, chap. xvi. of the Fo-kwe-ki. Though thus enrolled, their position was still humble. The female ascetic, even of a hundred years of age, was bound to respect a monk even in the first year of his ordination.

Sakya has become a saint in the Roman Catholic Church, under the name of St. Josaphat.

In Burma, his statues or images appear in Buddhist temples, sometimes seated cross-legged, in the attitude of teaching, sometimes resting on his right side supporting his head on his right hand. He is represented in those of India seated on the Sinhasana, or lion's throne, at first alone, but, under the Mahayana heresy, with other beings near, often with standing figures holding fly-flaps; or seated on a throne, the corners of which are upheld by two lions, with his feet on a lotus blossom, and his hands in front of his breast, the little finger of his left hand held between the thumb and forefinger of the right. This is the attitude of teaching, and is known as Dharma Chakra Mudra. Buddha and the Jaina Tirthankaras are also represented squatting with their legs doubled under them, and the hands laid one on the other over the feet, with the palms turned upwards. This is the reflective or meditative attitude, Jnana Mudra or Dhyana Mudra. A third attitude is called Vajrasana, also Bhumisparsa Mudra, when the left hand lies on the upturned soles of the feet, and the right, resting over the knee, points to the earth. He is also figured standing with the right hand uplifted in the attitude of blessing, or with the alms-bowl of the Bhikshu or mendicant. Also resting on his right side, with his head to the north, the attitude he took at his death.

Sakya Sinha, according to Tibetan books, died near the town of Kusba in Kamrup, beneath the shade of two sal trees on the southern bank of the Brahmaputra river, then called Hiranyo. The

Pali books of Burma and Ceylon say B.C. 544, General Cunningham has B.C. 478, at the age of 80. In the middle of the 19th century, Professor Kern of Leyden, in a dissertation on Buddha, gives B.C. 388 as the date of his death; and Professor Weber, in the Literisches Central Blatt of 1874, adopted the view taken by Professor Kern. Mr. Fergusson gives as under the dates of events:—

Buddha born at Kapilavasta,	B.C. 560
" became an ascetic,	531
" assumed Buddhahood,	528
" died,	481
First Buddhist council,	481
Second Buddhist council, held in the 10th year of the reign of Kala Varudhana,	381
Alexander's invasion of India,	327
Philip made satrap,	327
Alexander left Patala after the rains,	326
Philip murdered by mercenaries,	326
Alexander's death,	323
Porus allowed to retain the Panjab,	321
Seleucus obtains Babylon,	321
Chandragupta founds the Maurya dynasty,	319
Bindusara succeeds, and rules 28 years,	295
Bindusara's death,	267
Asoka's coronation,	263
Asoka converted to Buddhism,	259
Mahendra, son of Asoka, ordained a Buddhist priest,	257
Third Buddhist council, held in his 17th year,	246
Mahendra sent to Ceylon in his 18th year,	245
Death of Asoka's queen, Asandhi Mitra,	233
Asoka became an ascetic in the 33d year after his conversion,	227
Death of Asoka in the 38th year of his reign,	225
Suvassa, successor,	225
Dasaratha,	215
Sangatu, Bandupalita,	200
Indrapalita, Salisuka,	196
Somasarma,	185
Sasadharma,	183
Vrihadratha,	180

He is known to the various races by various names and titles. He was called Sakya and Sakya Sinha from his clan; Sauddho-dani, as the son of Suddhodana; and from his mother Maya-Devi he got the name of Maya-Devi-Suta; Gautama was from his got or ancestral descent, and hence the Burmese Gaudama; Arka-Bandhu, or Kinsman of the Sun, from his descent as a Kshatriya of the Solar line; Bhagawa or Bhagavat, meaning saintly; Sakya Muni, or Sakya the hermit; Tatha-gata, he who has gone away; Sramana, the priest; Maha-Sramana, the great priest. He is the Buddas and the Sarmanes of the Greeks; the Mercurius Mayæ filius of the Roman Horace; Bud or Wud of the pagan Arabs; Toth of the Egyptians; Woden of the Scandinavians. His clan name of Sakya became the Xa-Ka of the Chinese and Japanese, and the Shakahout of Tonquin; and the Chinese, having no b or d in their monosyllabic language, style him Fo, Fo-e, Fo-Hi, and Fo-to; in Tibet he is Pot or Po-ti; also in Siam, Chom-dan-das, Sangs-gyas, and Sommo-no-Kodam.—Ferg. and Burg. Cave Temples of India, 24, 178.

BUDDHA-PRIYA, the compiler of the Rupasiddhi, the oldest Pali grammar, now lost. It was compiled from the more ancient work of Kachhyayana.

BUDDHA-SARA. SANSK. The essence of the Buddha philosophy.

BUDDH GAYA or Budh Gaya, a village, lat. 24° 41' 45" N., long. 85° 24' E., about 6 miles from the town of Gaya in Bengal. Sakya Muni, in the 6th century B.C., resided here for four years under a pipal tree (Urostigma religiosa), sitting

with his legs crossed in mental abstraction. That celebrated tree, the Bodhi-tree, or tree of wisdom, still exists, but in a very decayed state. The rajasthan, or palace, was the residence of the Buddhist king Asoka and his successors on the throne of Magadha. In front of the tree are the ruins of an ancient Buddhist temple, restored A.D. 1805-1306 by a Buddhist ruler, but only the mandir or shrine remains. It is largely visited by pilgrims, who deposit their offerings at the foot of the pipal tree. One inscription on a stone in Sanskrit, dated Samvat 1005 (A.D. 948), is said by Dr. Wilkins to import that the temple of Buddha at Buddha Gaya was built by Amara Deva, the author of the Amara Kosha; but it may mean restored, as it was seen before Amara Deva's time by Fa hian (v. p. 189). Another Pali inscription, of date 1305, in Burmese, says the chaitya or temple was first built by Asoka, 218 years after Buddha, or B.C. 325; often restored, and finally restored by the Burmese Envoys, A.D. 1306-1309 (v. p. 157). The vaulted cavern or Nagarjuni has other inscriptions, all short, and in every variety of the Deva Nagari.—*Beng. As. Soc. Journ.* vi. p. 671; *Tr. of a Hindu*; *Fergusson's Buddhist Architectural Remains*; *Hardy's Eastern Monachism*, p. 434; *Buddha-Gaya, the Hermitage of Sakya Muni, by Rajendra-lala Mitra, LL.D., C.I.E., etc.*; *Imp. Gaz.*

BUDDHI. SANSK. Perfect knowledge, the acquirement of which, with the Buddhists, frees from further transmigrations.

BUDDHISM is a religion which had its origin in the teaching of Sakya Sinha. In the year 1881, the population of the world was estimated at 1,500,000,000, of whom 470,000,000 were supposed to be Buddhists. Some circumstances, of which we are uninformed, must have prepared these regions for the reception of his ascetic doctrines. From its rise in the 6th century B.C., it gradually spread from the valley of the Ganges over the whole of India; it extended into Kābul, into Bāman in ancient Bactria, a district of Persia under Darius; traces of it early appear through Mongolia and Tibet; it was introduced into China by 600 Kashmirian missionaries in A.D. 65; through Hindustan it extended into the Peninsula and to Ceylon, into Nipal, Burma, Assam, Siam, Cochin China, the islands of Formosa and Japan; and, except in India, where it arose, and in Kābul, Bactria, Bāman, and Kashmir, it still flourishes in the countries named, and in Sikkim, Ladakh, Zaskar, Dras, Suru, Purik, Spiti, Nubra, Rong, Janskar, Hanle, and Rupshu. Buddhism made a great start in the time of king Asoka, and religious Buddhist counsellors assembled at Pataliputra with Asoka. After nine months' consultation, they sent out nine teachers, viz. one to Kashmir and Peshawur, a second to the country of the Narbada, a third to Mewar and Bundi, a fourth to Northern Sind, a fifth to the Mahratta country, a sixth to the Greek province of Kābal, Arachosia, a seventh to the country of the Himalaya, the eighth to Ava or Siam, that is, the 'golden land,' the aurea regio or the aurea chersonesus, and the ninth to Lanka or Ceylon.

It is known that Buddhism was introduced at the court of Ming-ti, emperor of China, in A.D. 65; into Java in A.D. 24 to 57; into Kaoli (Corea) in A.D. 372; into Pe-tsi, in Corea, in A.D. 384; into Tibet, under Hla-ta To-ri, in A.D. 407;

into Sin lo or Sinra (in Corea), A.D. 528; in 552 into Japan; and in 632, under Srong dbzam gampo, Buddhism was introduced into Tibet generally.

About 450 A.D., missionaries from Ceylon permanently established their religion in Burma. The Burmese, however, allege that just after the Patua council, B.C. 207 and 244, missionaries came to Tha-ton, between the Sitoung and Salwin estuaries.

In Turkestan, Buddhism was still prevailing in A.D. 1419, in the cities of Turfan and Kamil, when Shah Rukh's ambassadors passed through; and Tagalag Timur was the first Mahomedan sovereign of Kashgar of the lineage of Chengiz. There are now many Buddhist priests at the capital of Khotan; but Mahomedanism had been extensively prevalent in East Turkestan for centuries prior to its conquest by the Chinese in A.D. 1757, and the Buddhist priests and temples may have been since introduced.

In the first 500 years there were several assemblies of its eminent men, to discuss its condition and prospects. At the council held B.C. 543, when 500 of Buddha's disciples were assembled in a cave near Rajagriha, to gather together his sayings, they chanted the lessons of their master, in three great divisions—(1) the words of Buddha to his disciples; (2) his code of discipline; and (3) his system of doctrine. These became the three collections, Pitaka, or baskets of Buddha's teaching; and Sangiti, the word for a Buddhist council, means literally a singing together.

Even before the decease of Sakya Sinha, however, schisms had arisen amongst his followers. Ananda had been with him from the first, and to him Buddha had referred his disciples as the depository of what he himself had said. Nevertheless, so rapidly had the views of Buddha been departed from, that Ananda was excluded from the deliberations of the first Buddhist council as an unbeliever, and only re-admitted when he had submitted to their views (Bunsen, God in Hist. i. 341). A century afterwards, B.C. 443, 381? in the reign of Kala Varddhana, a second council of 700 was held at Vaisali, to settle disputes between the more and the less strict followers of Buddhism; it condemned a system of Ten Indulgences which had grown up, but it led to the separation of the Buddhists into two hostile parties, who afterwards split into 18 sects (*Imp. Gaz.* p. 248). Eighteen heresies are deplored in the Mahawanso, within two centuries of Sakya's death; and four distinct sects, each rejoicing in the name of Buddhists, are still to be traced amongst the remnants of his followers. Not reckoning the doctrines cherished among the Jaina of Gujerat and Rajputana, its mysteries, as administered by the Lamas of Tibet, are distinct from the metaphysical abstractions propounded by the monks of Nepal, or the philosophies of the Burmans. Its observances in Japan have undergone a still more striking alteration from their vicinity to the Sinto sect; and in China they have been similarly modified in their contact with the rationalism of Loo-tze, and the social demonology or spirit-worship of the Confucians (*Ten. Ceyl.* p. 527).

The third council, B.C. 246, was assembled by Asoka at Patna; and the fourth and last council was held under king Kanishka, and it was at this fourth council that Nagarjuna introduced the Mahayana doctrine.—*Ferg.*; *Imp. Gaz.* Both

these rulers made Buddhism a state religion. Asoka had inscriptions recorded on rocks and columns, enjoining its doctrines, and some of these still remain. His son Mahendra, B.C. 243, carried to Ceylon Asoka's version of the Buddhist scriptures in the Magadhi language. He took with him a band of missionaries; and soon after, his sister, the princess Sanghamitta, who had entered the order, followed with a company of nuns. In the inscriptions, Buddhism appears as a system of pure abstract morality, no trace being exhibited of the worship either of Buddha himself, or of the serpent or tree.

Kanishka ruled in Kashmir and N.W. India, about A.D. 10-40, but his sway extended to both sides of the Himalaya, from Yarkand and Khokand to Agra and Sind. The assembly convoked by him consisted of 700 members. They drew up their commentaries on the Buddhist faith, which supplied in part materials for the Tibetan or Northern Canon.

The prominent sects are known as the Hinayana and Mahayana, the Lesser Vehicle and the Greater Vehicle. The original puritans belong to the Hinayana. They practised morality, with a few simple ceremonial observances. The Mahayana school was founded by the 13th patriarch, Nagarjuna, a native of Berar, about 500 or 400 years after Buddha. It taught an abstruse mystical theology, in which Buddha was pushed into the background by female personifications of Dharma or the Prajna Paramita, and other goddesses, by Jnanat Muka Buddhas, or forms of the senses (Ferg. and Burg. Cave Temples of India, 182). The Mahayana includes many later corruptions or developments of the faith, as originally embodied by Asoka in the Lesser Vehicle or Canon of the southern Buddhists, B.C. 244. The Buddhist Canon of China is a branch of the Greater Vehicle, and was arranged between A.D. 67 and 1285. It includes 1440 distinct works, comprising 5586 books; and the Buddhism of China and Japan is a grossly idolatrous religious system.

Kanishka and his council became in some degree to the northern or Tibeto-Chinese Buddhists what Asoka and his Patna council (244 B.C.) had been to the Buddhists of Ceylon and the south. But the ultimate divergence between the canons is great, both as to the historical aspects of Buddha's life and as to his teaching.—*Imp. Gaz.*

The rails of the dhagobas at Buddha Gaya, Bharhut, with the eastern caves, give a complete history of Buddhism as it existed in India during the Mauryan dynasty (B.C. 325 to 188). At Sanchi and the western caves is given a complete representation of the character it assumed from the 1st century before the Christian era till the third or fourth of it. At Amravati and the N.W. monasteries in Peshawur, are shown the modifications introduced before and during the 4th century; and from Ajunta and later caves are to be traced its history till it became almost Jaina, and then altogether faded away.—*Fergusson*, p. 206.

The gateways of the Sanchi tope belong to the first half of the 1st century of the Christian era, and, though subsequent to the Naga revelation, the sculptures scarcely indicate its existence. Buddha does not appear on the Sanchi sculptures as an object of worship. The serpent is there, but rare. The dhagoba, or depository of the relics

of saints, is there, as also are the tree, the wheel, and other emblems, and, on the whole, the sculptures on the Sanchi tope may illustrate the Hinayana school of Buddhism, at the period when other doctrines were about to be introduced.

The Amravati sculptures, again, belong to a period 300 years later than that of Sanchi, and in them the new school of Mahayana Buddhism may be studied. In these, Buddha is an object of worship, but the serpent is his co-equal. The dhagoba, tree, and wheel are revered, and the sculptures contain all the legends of the later books, though in a purer form. Hindus, Dasayas, and other men, women, and animals, especially monkeys, appear in the sculptures worshipping the serpent and other gods. The serpents are all divine, five and seven headed; and representations are numerous of the Naga angelic orders,—the female Naga with one serpent only springing from the back, the male Naga with three. In the Amravati sculptures are tonsured priests, and other signs of a clerical order segregated from the laity, and of an established ritual. Sanchi is illustrative of the Hinayana Buddhist philosophy, 500 years before the oldest Buddhist book; and Amravati illustrates the Mahayana philosophy 600 years after its promulgation.

The frescoes of the caves of Ajunta illustrate a period 300 years later than the Amravati tope, and belong to the time immediately preceding the decline of Buddhism in India. In No. 19 chaitya cave, Ajunta, he is the object of worship, and occupies a position in front of the dhagoba itself, surmounted by the triple umbrella. A pure theism has become changed into an overwhelming idolatry.—*Fergusson*, p. 124.

Seemingly the symbols or idols first sculptured were the chakra, or wheel of the law, the Bodhi Tree, and the dhagoba (Dhatugarbha), a cupola-shaped structure intended to contain relics, and which, in the ancient sanctuaries, occupies exactly the place of the altar in churches of the Romish and episcopal forms. About the 4th century it was replaced generally by images of Buddha, but representations of him have been found on the coins of Kanishka, and his images were worshipped in the first century.—*Barth*, p. 128.

In Tibet Buddhism, relic-worship is not expressed either in their architecture or their religious forms. But it is a nation of priests; their monasteries are innumerable, some with 2000 or 3000 lamas; and, according to M. Huc, up to 15,000 at Sera, near Lhasa, where are long streets of cells, mostly surrounding courtyards, generally with a shrine or altar in its centre. That of Boudha La is where the Delai Lama resides, outside of Lhasa. In its centre is a four-storeyed building, with a dome covered with plates of gold.—*Fergusson*, p. 312.

Buddhism prevailed in different parts of India partially for 1800 years. During this long period, Buddhism was swept from many provinces by great revivals of the Brahmanical creeds, generally brought about by migrations of Brahmans from Northern India, under whose teachings, and often with violence, Buddhism in British India became extinct. It had, however, triumphed throughout India from the time of Asoka, B.C. 255, up till the 5th century A.D., trampling upon the whole ceremonial of Brahmanism, with all its sacrifices, penances, and castes, and asserting the

paramount necessity for purity of mind and body, and a more elevated moral rule. Sacrifices of all kinds were especially excluded from the Buddhist ritual, the offerings of flowers to Buddha being alone permitted. In A.D. 400, when Fa Hien visited India, Buddhism was still the dominant religion, but the Vaishnava sect were already rising into consequence. In the middle of the 7th century, although the pilgrim Hiuen Tsiang found numerous temples of the Saiva sect, whose doctrines had been embraced by Skanda Gupta and the later princes of Patalipura, yet Buddhism was still the prevailing religion of the people. But the faith of Sakya was evidently on the decline; and though it lingered about the holy cities of Benares and Gaya for two or three centuries later, it was no longer the honoured religion of kings and princes, protected by the strong arm of power, but the persecuted heresy of a weaker party, who were forced to hide their images under ground, and were ultimately expelled from their monasteries by fire. In 1835, Major Cunningham excavated numerous Buddhist images at Sarnath, near Benares, all of which had evidently been purposely hidden under ground. He found quantities of ashes also, and there could be no doubt that the buildings had been destroyed by fire; and Major Kittoe, who subsequently made further excavations, was of the same opinion. General Cunningham also dug up a colossal statue of Sakya in the Kosamba Kuti temple at Sravasti.

It was about the year A.D. 800 that there arose the great Brahmanical revival, which has prevailed in India up to the present day, but Buddhism left its influence: the great sacrifices of antiquity have never been revived; the Homa and Payasa, or ghi and food sacrifices, are exclusively offered by the Vaishnava sectarians, even by most of the Saivava; and the sacrificing of buffaloes, goats, and fowls is chiefly practised amongst the uneducated Sudra and non-Aryan races, to Durga, Kali, or the earth, under the form of the various local deities. The Vaishnava, who look for the coming of a tenth avatar, had been inclined to regard Sakya as the prophesied incarnation; but when Buddhism was seated on the throne of Magadha, and the old Vaishnava sect was persecuted, they fell away from Buddhism, and have ever since been apart, even more tender of animal life than any Buddhist, but in other doctrines dissimilar.

Amongst the *Singhalese* Buddhists, the term Buddha is understood to indicate beings who appear in the world at intervals, and are able to teach men the way to attain nirvana (Hardy), and they recognise Anomadassa as a Buddha prior to Gautama.—Hardy, p. 433.

In Ceylon, this faith has not been subjected to much persecution. In the 16th century, the Tamil invaders made every effort to destroy the Buddhist books; but the priests subsequently sent a mission to Siam, and properly ordained priests were imported from Amarapura in Burma. By the 18th century, Buddhism had regained its ascendancy. In the 19th century, the priests have been actively diffusing a knowledge of their creed. They have printing presses, from which tracts, pamphlets, and serials issue in great numbers. They present some new arguments and inferences; but the defiant and blasphemous expressions which they contain against the sacred name of Jehovah, are probably the most awful ever framed in

human language. In Ceylon, on Adam's Peak, is a footmark which has been the object of pilgrimage for ages, which Buddhists ascribe to Buddha, but Mahomedans to Adam. There are models of feet in different parts of the island.—Yule, ii. 359, 368. The tooth of Buddha, Dalada, SINGH., Dhata Dhata, HIND., is greatly revered. There are, in Ceylon, statues of Buddha of great height. One near Mehintala is 70 feet high, and one of Gautama Raja at Carculla is 38 feet. At Anarajapura, in Ceylon, are several Buddhist dagobas or dhagobas, the heights of which vary. They were built at from B.C. 307 to A.D. 276.

A shoot from the pipal tree at Buddha Gaya, known as the Bo Tree, has been cherished at Anarajapura for twenty centuries; and in the courtyard of every vihara and temple of Ceylon, pipal trees are preserved as objects of veneration. A system of caste was introduced by king Vijaja amongst the Ceylon Buddhists, which still prevails there, though directly opposed to Buddhist doctrines, and not existing in any similar form in other Buddhist countries.

Buddhism has been examined by Prinsep, Hodgson, A. Cunningham, Yule, Cooma Koroei, Rajendra Lal, Sykes, and Bird in India; by Pallas, Schmidt, Burnouf, Müller, Bunsen, Barth, Fergusson, St. Hilaire, Benfey, E. Edkins, Stanisla Julien, Lassen, Abel Remusat, Tennent, Wilson, and Wassiljew of Europe; by Turnour, Gogerly; and Spence Hardy of Ceylon; by Phayre, Mason, Lowe, Bigandet, and Bastian of Burma; and by Legge of China; and there has been much discussion as to the nature of the doctrines which Sakya preached. There is no doubt that he was an ascetic, for he left his wife and family, and preached and inculcated asceticism; and however greatly his followers may now vary in their belief, it is a fundamental doctrine with all of them, that existence is an evil, for birth originates sorrow, pain, decay, and death. Whether he believed in a Supreme Being is questioned. Mr. Hodgson describes his belief as 'monastic asceticism in morals, and philosophical scepticism in religion.' Bunsen considers that Sakya, the ascetic, of all founders of religions, at once stands the nearest to, and the farthest from, Jesus of Nazareth, the Christ. The farthest, inasmuch as he renounces in despair the actual world which Jesus purposes to raise to Godlike purity; but the nearest, by virtue of the width and humanity of his conceptions of God, and the wide diffusion which they have obtained. But this view was not held by many of his own day, who styled him An-Iswara, the lordless one, meaning that he taught an absolutely atheistic nihilism; and Burnouf considered the doctrine of Buddha to be atheistic and materialistic in his teaching that existence is a burden, and that annihilation is the highest happiness which the soul can strive after. Barth says (p. 110) Buddha's doctrine is absolutely atheistic. The great truth of the Fatherhood of God is lacking in Buddha's teaching. According to Bunsen (God in Hist. p. 345), his creed introduced or revived civilisation, and softened manners amongst millions. At present the Buddhists are in two great sects, those of the Mahayana, and those of the Hinayana. The Mahayana is represented in the literature of the northern Buddhists of Tibet, Nepal, China, and Japan; and the Hinayana in that of Ceylon, Burma, Siam,

and Cambodia, and Anam? The Buddhism of Mongolia is an offshoot from Tibet, and that of Corea, Japan, and Cochín-China is from China.

In China and Mongolia, according to MM. Huc and Gabet, there are theistic Buddhists, who acknowledge an Adi-Buddha, or eternal Buddha, whom they consider to be God over all.—*Yule*, i. 242.

Sakya Muni discountenanced the philosophic views of the Brahmans, but did not deny the authority of the Vedas. But he was not followed in this by subsequent professing Buddhists.—*T.*

Three marches from Jeypore, on the road to Delhi, the town of Babra has one of the edicts of Asoka on a block of stone or rock on a hill, in old Pali, and of date B.C. 309. It is in the oldest Lat character. It differs somewhat in style and language from the pillar and rock edicts. The subject is the Buddhist commandment, forbidding the sacrifice of four-footed animals. The Vedas are alluded to, but though not named, are condemned as 'mean and false in their doctrine, and not to be obeyed.' The scriptures of the Muni (which must be the Vedas) are spoken of as directing blood-offerings and the sacrifice of animals. Priests and priestesses, religious men and religious women, amongst the Buddhists, are commanded to obey the edict, and bear it in their hearts (vol. ix. p. 617).

The sacred canon of the Buddhists now extant is called the Tripitaka, i.e. the three baskets. The first basket contains all that has reference to Vinaya, or morality or discipline; the second contains the Sutra, or discourses of Buddha; the third, Abhidharma, includes all works treating of dogmatic philosophy or metaphysics. The first and second each contain five separate works. The second is generally known by the name of Dharma, or law; and it has become usual to apply to the third basket, which contains seven separate works, the term Abhidharma or bye-law. The Sutra are ascribed to Sakya Muni; they consist of ethical and philosophical dialogues by Sakya; and a writer in the *Calcutta Review* states they make mention of the gods Narayan, Jonardhan, Shib, Brahma, Petomah, Borun (Vorun), and Songkar. Other names are Kabir, Sokr or Vasob, and Vissoo Kornno.—*Cal. Rev.*

Professor Max Müller, in 1881, translated the *Dhammapada*, a collection of verses; the *Sutta Nipata*, a collection of discourses, was translated by V. Frausböll; and Rhys Davids issued the Buddhist Sutras.

Buddhist writings have been preserved in two comparatively original redactions, but neither of them in the Magadhi dialects, the primitive language of their creed. The Buddhists of Nepal, Tibet, and China have their books in Sanskrit, or have translations immediately from the Sanskrit. The Sanskrit writings were made known about 1840, by Mr. B. H. Hodgson.

The literature of the Buddhists of Ceylon, Burma, and Siam, is in Pali; and the *Dipavansa* contains a history of Buddhism in that island, which breaks off with the death of Mahasena, A.D. 302. The *Mahawansa* was compiled by Mahawana, who lived about A.D. 500; it has been brought down to the 18th century by successive writers, and was translated by the Honourable G. Turnour of the Ceylon Civil Service.

Their relative age and authority is not yet

decided, though that of the Pali has been known since the 5th century by the commentaries of Buddha ghosha.

Analyses of this literature have been made in Spence Hardy's *Eastern Monachism*; Childer's *Pali Dictionary*; Rhys David's *Buddhism*; B. H. Hodgson's *Memoirs in Asiatic Researches* and the reprint of his *Collected Essays*, *Caoma of Koros* in *Bengal As. Soc. Journal* and *Asiatic Researches*.

The Chinese collection has been described in Beal's *Buddhist Tripitaka* as it is known in China and Japan, and W. Wassiljew's *Der Buddhismus*.

Up to the present time, all that has been found of the Abhidharma is in extracts and fragments.

Some of the Sutras have been translated by E. Burnouf, Max Müller, and Cecil Bendall, and in the *Journal of the R. As. Society*. The *Vinaya Pitakam* in the Pali has been published by H. Oldenberg; the *Mahavagga* in 1879, and the *Cullavagga* in 1881.—*Barth, Rel. of India*.

Mahendra, son of Asoka, is supposed to have brought the Attha-katta, ancient commentaries in Pali, to Ceylon, and to have translated them into Singhalese, which Buddha ghosha, about A.D. 430, re-translated into Pali. According to another account, the doctrines were first reduced to writing by the Ceylon priests during the reign of king Vartagamani, 88-76 B.C., and by a synod assembled 10-40 A.D., by the Turushka king Kanishka. For the former the language used was the vernacular, from which in the 5th century it was translated into Pali; for the latter, Sanskrit.

The Buddhist religious works of Tibet brought to notice by Alexander Csoma de Koros, are the *Tanjur*, which consists in its different editions of 100, 102, and 108 folio volumes, and comprises 1083 distinct works. The *Tanjur* consists of 225 volumes folio, each weighing from 4 to 5 lbs., in the edition of Pekin; but editions have also been published at Lhasa, and other places. Of these, De Koros gave an analysis in the 20th volume of the *Asiatic Researches*, and died soon after.

In the Tibetan creed, the doctrine of transmigration is shown, and final absorption into Buddha, as the reward of a virtuous life. It therefore follows that Buddha, with the Tibetans, is the divine Being who created all, and to whom all return, and that for the good there is no separate existence in a future world. There has been some misapprehension regarding the Buddhas and Budhisatwas of the Tibetans, the regeneration of the Grand Lama being considered as an exceptional case of a Buddha returning amongst mankind. Mr. Hodgson (pp. 137, 138) truly calls the 'divine Lamas' of Tibet, Arhantas; but he believes 'that a very gross superstition has wrested the just notion of the character to its own use,' and so created the 'immortal mortals, or present palpable divinities of Tibet.' In the *Nouv. Jour. Asiat.* t. xiv. p. 408, ii., Fra Orazio says that 'Lama sempre sara coll' istessa anima del medesimo Ciang-c'iub, oppure in altri corpi.' Remusat was not aware of this fact when he stated, 'Les Lamos du Tibet se considèrent eux-mêmes comme autant de divinités (Bouddhas) incarnées pour le salut des hommes.' But the explanation which Major Cunningham received in Ladakh, which is the same as that obtained by Fra Orazio in Lassa, is simple and convincing. The Grand Lama is only a regenerated Budhisatwa, who refrains from

accepting Buddhahood, that he may continue to be born again and again for the benefit of mankind. For a Buddha cannot possibly be regenerated, and hence the famous epithets of Sathagatha, 'thus gone,' and Sugata, 'well gone,' or 'gone forever.' The valley of Le or Ladakh proper, Zaskar, Hembaks or Dras, Suru, Purik, Spiti, Nubra, Janskee, and Rong, are all Buddhist (*The Bilsa Topes, by Major Cunningham, pp. 1-67*).

In Tibet, the Buddhist practical creed is thus briefly stated by Csoma de Koros:—1st, To take refuge only with Budh. 2d, To form in the mind the resolution to aim at the highest degree of perfection, and so to be united with the Supreme Intelligence. 3d, To humble oneself before Budh, and to adore him. 4th, To make offerings of things pleasing to the six senses. 5th, To glorify Budh by music, and by hymns, and by praise of his person, doctrine, and love of mankind, of his perfections or attributes, and of his acts for the benefit of animated beings. 6th, To confess one's sins with a contrite heart, to ask forgiveness of them, and to repent truly, with a resolution not to commit such afterwards. 7th, To rejoice in the moral merit and perfection of animated beings, and to wish that they may obtain beatitude. 8th, To pray and exhort existing holy men to turn the wheel of religion, that the world may long benefit by their teaching (*Prinsep's Tibet, Tartary, and Mongolia, p. 167*).

One of the established points in Tibetan Buddhism is the belief in metempsychosis, or the migration of the souls of animated beings; and the Tibetans believe in six forms in which a living being may be re-born, viz. lha, Tin.; deva, SANSK., spirits or gods; mi, or men; lha mayin, or evil spirits; dudo or jolsong, brute beasts; yidaga, imaginary monsters; and inmates of nyalba, or narakas, or hell.

To cease to exist is the prevailing hope with all Buddhists. The Buddhist longing for annihilation is an exaggeration of the craving for rest which has been felt by many races, and by the followers of many creeds. The universal cry of the overworked and sorrowing children of men has ever been that of the lotus-eaters:

'There is no joy but calm.'

The universal refrain of humanity is one implying trouble, anxiety, and never-ceasing toil, and its aspiration is that of repose. A holiday is a cessation of labour; and the highest hope of many Christians has ever been, to reach that bourne where the wicked cease from troubling, and the weary are at rest. Nirvana is as a blown-out candle. It is essentially in theory a non-active faith—a faith of negatives. Their ten commandments, according to Max Müller, are:—Do not kill; do not steal; do not commit adultery; do not lie; do not get intoxicated; abstain from unsuitable words; abstain from public spectacles; abstain from excess in dress; do not have a large bed; do not receive silver or gold. Ten obligations or precepts, *dasa sil*, are repeated when a Burmese enters a *kyoung* as a novice (*Fytche, ii. 192*).

In carrying out the ascetic views of Sakya Muni, pious Buddhists of all these countries, both men and women, have, from the first enunciation of his doctrines, been accustomed to withdraw from public life into monasteries and convents. We have distinct evidence of the existence of institu-

tions of this kind established at dates long antecedent to the Christian era. They were in the form of vihara, or cells and caves, or buildings erected for the convenience of those who sought so to spiritualize themselves by separation from the world. Only the ruins of such buildings exist in peninsular India, but in Tibet and Tartary they still are like those left by the Indian Sramanas or Lamas, ten and twenty centuries anterior to the present, and varying very little from what is reported of the monasteries of the earlier Christians; there are also, according to M. Huc, both at Koon-boom and in Tibet, the types of the devotees who practised penances, and sat as pillars, like Simeon Stylites. In Burma, every Buddhist lad, for a period, must enter a monastery.

Pythagorean institutions are described as very monastic in their character, in that respect resembling closely the vihara of the Buddhists of India. The doctrines of Pythagoras were widely spread over Greece, over Italy and Asia Minor, for centuries after his decease, and under the name of Mithraic the teachings of Budh had also a wide extension (*Prinsep's Tibet, pp. 140, 161*).

To a Buddhist ascetic, continence is essential to purity, but even contact is unlawful. Nevertheless convents for women are very characteristically Buddhist institutions; they existed in the Burman empire till of late years, and are still to be met with in Nepal, Tibet, and China (*Toy Cart, p. 142*).

Burma.—Dr. Mason says the philosophy of Buddhism, in Burma, is the religion of Buddhism. To be a Buddhist is to believe in the philosophy of Being. The Buddhists propound as an axiom, that all things are unreal, and on it all their philosophy is based. Some Buddhists recognise idols, a few wholly reject the worship of idols; but these are equally Buddhists, who believe that true happiness is not found in any state of body or mind; that existence is a calamity; and that the only desirable object is the extinction of being, or nirvan, where there is deliverance from ideas and consciousness. To be a pious Buddhist is to remain unaffected by surrounding objects, to deny oneself of everything beyond the bare necessities of life, and to cry out, day and night, all things are transitory, productive of unhappiness, and unreal. A change of heart and implicit faith are essentials of salvation. Burmese Buddhists believe in good and evil spirits, and in the scheme of transmigration, and, for the good, final absorption; and the Burmese Buddhist prays that he may, in his transigrations, meet with a Buddha to convert him. Woman takes a humble position in Burmese Buddhism, and she longs to become a man in her next transmigration. Their views as to the desirableness for release from this life are evinced in modes painful to European feelings. The Rev. Mr. Marks, when in Moulmein, had a sick pupil whom he went to see. On entering the house, and inquiring for the lad, the mother in a glad manner repeated he was well, and jauntily led to another room, where he was pained to find the young boy lying dead, and still more pained by the mother continuing to repeat that he was well.

In Burma, in some temples, four past terrestrial Buddhas occupy the four sides of the temples (*Yule, Cathay, i. 242*).

In Burma, there is a great belief in spirits, both good and bad,—amongst others, the nat and the

bilu. An attempt to reform Buddhism was made in 1863, by some of the chief phoungyes of Kemendine. Like the Protestants of Christianity and the Brahmoists of Hinduism, the reformers seem to go back to their oldest books, or bedagat, the three series of which minutely describe the duties of priests and laity, and define the objects of faith. They condemned the lax practices of this degenerate age, such as priests wearing sandals, carrying umbrellas, and visiting religious theatrical shows. At the bottom of their reforms, insignificant as they appear, there was doubtless much puritan earnestness. They called themselves 'Soolay Gandee,' Soolay meaning the great spirit to whom the pagoda in the centre of Rangoon is dedicated. The Buddhists of Burma are liberal almsgivers; but the act of making the offering is the final individual merit, and the utilization of the gift is not regarded.

In Burma, the Buddhist priesthood is open to every orthodox believer. All that it enjoins is a life of purity, temperance, and truth. The h'poongyee is the priest. Every Burma boy becomes a hierophant, and during the most receptive years of his life, remains under the discipline and control of the village h'poongyee, to whom the family authority is temporarily delegated. He is housed, clothed, and fed in the kyoung or monastery, and the parents are put to no trouble or expense throughout the whole period of his tuition. The h'poongyee is the master. As a rule, he is strict and peremptory, yet sufficiently attentive to the moral and physical well-being of his pupils as to earn their continuous attachment and esteem. His teaching has a strong religious tinge, but it teaches discipline, diligence, and habits of punctual attendance. The h'poongyees have ceased to be propagandists, and have undertaken the work of national instruction, and have all the elementary education in their power.

Tibet.—The Buddhist priests or Lamas of Tibet, Mongolia, and Manchuria acknowledge the Grand Lama of Tibet as their spiritual head. He is the spiritual and political ruler of Tibet, and is subordinate to the Emperor of China only. The Lama are chosen from all classes of society; and in Mongolia, when there are two or three sons in a family, one of them must be dedicated to the service of Lamaism. They reside in monasteries, and are celibates, shave their heads, and wear a yellow robe. Their religious services resemble those of the Christian cathedrals. A human thigh-bone is hollowed out, and made into a musical pipe. The Lamas in the towns of Lammau and Ye-hole are about 10,000 in number. Many of them are wanderers on the vast plains of Mongolia. Lama temples are very imposing (Gray, p. 134).

Siam.—Between the Buddhists of Siam and Ceylon there has been much intercourse, and it is probable that almost identical doctrines are held in the two countries. During the efforts made by the Buddhist monks of Ceylon in the defence of their religion, and in their attacks on Christianity and on Jehovah, the king of Siam and one of the native chiefs of Kandy contributed largely towards the publication of the numerous tracts, pamphlets, and serials that were sent forth from the Buddhist printing presses of Ceylon. When Siam was visited by Sir John Bowring, a king was reigning, who in early life, when a late king had usurped the

throne, had withdrawn from political squabbles to the safety and sanctity of the religious profession, and was residing in a Buddhist temple, whence he was brought forth to occupy the throne, after the seclusion of a quarter of a century.

Cambodia.—It is stated by a writer in the Journal of the Indian Archipelago (No. xi. Nov. 1852, p. 606), that, in Cambodia, Buddha is not regarded as the first cause, the creator of all things; but there prevails amongst them a pantheism, in which all nature is deified, but above all they place Buddha, and worship him daily.

Laos.—Similarly, for instance, De Carne relates (p. 113) that Buddhists of Laos offer parts of their bodies at the image of Buddha, in the pagoda at Phnom in Upper Laos. The interpreter to the French mission made an offering of his forefinger up to the half of the upper joint. It was chopped off with a chopper by the attendants of the pagoda.

In China, monks try themselves with great severities. Buddhism has never taken a high place amongst the philosophies and religions of the country, though recognised as a state religion from A.D. 65, under the emperor Ming-ti. Buddhist missionaries had entered China in the third century before Christ. A missionary is mentioned in the Chinese annals, in the year 217 B.C.; and about the year 120 B.C., a Chinese general, after defeating the barbarous tribes north of the desert of Gobi, brought back as a trophy a golden statue of Buddha (Müller's Lectures, p. 139). There was much intercourse between the Buddhists of India and China for some centuries after the introduction of Buddhism into China; but in the 10th century, after A.D. 975, the religious visitors to China became greatly more numerous. Chinese pilgrims also had passed years in India studying their religion, and they wrote narratives of their travels. Of these, there have been published the travels of Fa Hian, A.D. 399-414; of Hiwen Thsang, A.D. 628-645; and of Hsuei Sing, who set out A.D. 518. A later traveller, Chi-Nie, who journeyed A.D. 964-976, was sent by the emperor of China, at the head of 300 monks, to seek relics of Buddha, and to collect palm books. Such pilgrimages continue; and Colonel Yule met men at Hardwar who had crossed the Himalaya from Mah-Chin, to visit the holy flame at Jawala-mukhi in the Panjab (Yule, ii. 411). The Chinese Buddhist invocation is, Oh me-to Fo! Oh me to Fo! In China and Mongolia, according to MM. Huc and Gabet, theistic Buddhists acknowledge an Adi-Buddha, or eternal Buddha, whom they consider to be God over all. In Ceylon and Indo-Chinese countries there is no such belief (Yule, i. 242). Chinese Buddhists are in different sects or schools, on account of differences in opinion on matters of philosophy. But though the religion is one of the recognised State creeds, Buddhists are not allowed to hold office.

Amongst the Japanese, the religion of Buddha and the Sinto religion have equal precedence. Their Buddhist priests use the Chinese language in their worship, except in their poetry, which is in Japanese. Bishop Smith of Victoria says there were in Japan, at his visit, eight sects or orders of Buddhist priests.—Tendai, Shinngong, Dzen, Oobaku, Jiodo, Hokki, Ikko,—whose priests are allowed to marry, and Nichiren. Shiu, Shu, or Ju is placed after the proper name, designating each

sect. At Dyboots, in Japan, is a bronze figure of Buddha, 53 feet high.

The Loo-Choo islands Buddhism is less perfect than that of the Japanese.

The Korean Buddhists and Buddhism were made known to Mexico by Chinese priests in the 5th century A.D., and had followers in that country until the 13th century, when the conquering Aztecs put an end to it.

Perhaps no religion equals the Buddhist in its injunctions as to tenderness for animal life; yet the Chinese, amongst whom are many Buddhists, and the Burmese, all of whom are Buddhists, are, as races, amongst the least merciful of mankind; are cruel, revengeful, and remorseless shedders of the blood of their fellow-man. The Burman Buddhist will not kill a quadruped animal for food, but he eats with readiness all animals that have died of disease, or that have been killed by others; and fish and the shrimp tribe, which their rivers and seas produce, are eaten in quantities greater than by any other known race.

Much of the costume of Buddhist priests and of the ritual has a similarity to those of Christians of the Romish and Greek forms; and De Guignes, De Guana, Clavijo, Anthony Jenkinson, all notice statements regarding the Greek Church, the Chinese, and the Burmans, indicative of a belief in the identity of the form of worship. When Dr. Richardson and Captain MacLeod, in their exploration of the countries east of Burma, fell in with Chinese traders, these generally claimed them as of their own religion. In the Chinese temples are a number of images not unlike the Christian representations of Mary and of some of the saints, lamps and wax lights are on the Buddhist altar, the Buddhist priests are robed in the sacred vestments called pluvials in Christian ritual books, processions of suppliants occur as with Christians, and chanting is in a style almost exactly like the Gregorian chants of Christian churches. Early Christian missionaries to China believed these to have been introduced among them by the devil clumsily imitating holy things, and grasping at the honours due to God (Yule, ii. 551).

In India, Buddhist caves exist in Kattyawar, in a hill near Setana; in another near Khadia, south of Junaghar; at Hinglaj near Pattan, between the villages of Khadati Khan and Khamardand, in the Baratas; in the Salemal hill, North Bhakra; at Mewarla in the hill of Kakanda; at Diveswar in the hill of Mandava, near Chotila; at Devagarhi, near the village of Bhadali, south of Palyad; at Bhoeragarh, N.E. of Jasdan; in the Jogi near Kanamatra village; in the Palitana hill; and at Dwarka. There are Buddhist caves also in Orissa.

The caves of Junnar, Bhaja, Bedse, Talaja hill, Sana, are remarkably devoid of figure ornament or imagery. In this respect they contrast strongly with Ajunta, Ellora, Karla, the second and last few caves at Nasik, and many in Salsette. At Ajunta and other places are images of Buddha, in the sanctuaries and on the façades. They are entirely absent at Bhaja, and in the older and middle series of about ten caves at Nasik, and at Junnar. The Tulja Lena group of caves in a hill about 1½ miles west from Junnar, are so named because one of them has been appropriated to Tulja Devi by the modern Brahmans.

Nidana indicates twelve conditions of existence, viz. ignorance, karma or acts, conscious-

ness, individuality, sensibility, objects of sense, sensation, desire or thirst, clinging to existence, birth, old age, and death.

The Buddhist triad or tri-ratna (three jewels) consist of Buddha, Dharma, and Sangha.

The Buddhist wheel is a prominent object in the Buddhist sculptures of India. It is supposed to be an emblem of the perpetual succession and eternity of matter; and it has served likewise another purpose in the corruptions of Buddhism. Prayers were passed on it by the priests, who then put the wheel into rapid revolution. Each turn had the efficacy of an oral repetition; and the faster it revolved, the more rapidly was the devotee approaching the ultimate bliss of nirvana.

Buddha-Pasaka is a Buddhist salutation. It means worshipper of Buddha. Upasaka is another salutation.—*Professor Max Müller's Lectures*, p. 139, and *Chips from a German Workshop*; *Bunsen's God in History*, i. pp. 341, 211; *Wheeler's History of India*, p. 159; *Tennent's Ceylon*, i. pp. 343, 527, ii. p. 614; *Tennent's Christianity in Ceylon*, pp. 206, 207, 264; *Hardy's Eastern Monachism*; *Calcutta Review*; *Frazer's Magazine*, June 1868; *Rangoon Times*; *Saturday Review*; *Bengal As. Soc. Journ.*; *Journ. Ind. Archip.*; *Bowring's Siam*, i. p. 50; *Prinsep's Antiquities*, by Thomas, p. 150; *Prinsep's Tibet, Tartary, and Mongolia*, pp. 140, 162; *Coleman's Mythology*, p. 205; *Rev. W. Taylor's Catalogue Raisonné*; *Toy Cart*, p. 142; *Cunningham's History of the Sikhs*, p. 23; *Cunningham's Bhilsa Topes*, pp. 1-67; *Colonel Henry Yule's Embassy*; *Yule's Cathay and the Way thither*; *Perry's Bird's-eye View of India*, p. 53; *Huc's Recollections of a Journey*, p. 106; *The Rev. J. T. Jones in Journ. Ind. Arch. No. 9*, vii.; *Tod's Rajasthan*; *American Expedition*; *Mr. B. Hodgson*; *De Carne*; *Bishop Smith*; *Colonel Fytche*; *Barth's Religions of India*; *Bishop Bigandet*; *Fergusson's Rock-cut Temples of India*; *Fergusson and Burgess, Cave Temples of India*; *Hunter's Imp. Gaz.*

BUDDHIST ARCHITECTURAL REMAINS are the only vestiges of the prevalence in British India of the doctrines taught by Sakya Sinha and his disciples, but they afford valuable illustrations of the alterations introduced into that great teacher's doctrines. It is known that the final disappearance of Buddhism from continental and peninsular India was violent,—their priests were slain and their temples burned,—and there can be no doubt that the Brahmanical priesthood were the immediate actors in the scenes, but whether these were of the Vaishnava or Saiva sect there is no information. The Buddhist remains now existing may be divided into four distinct classes: *First*, cave temples, containing topes, sculptures, paintings, and numerous inscriptions. *Second*, vihara, or monasteries; *Third*, inscriptions on rocks and pillars; *Fourth*, topes, or religious edifices.

The vihara or monasteries are of two kinds: *First*, cave viharas, of which several magnificent specimens have been published by Mr. Fergusson; and *second*, structural viharas, of which some specimens still remain at Sanchi, but in a very ruinous condition.

(a) The cave vihara consists of (1) natural caverns slightly improved by art. These are the most ancient, and are found appropriated to religious purposes in Behar and Cuttack. The next kind have (2) a verandah opening behind

into cells for the abode of priests, as in Cuttack and in the oldest vihara at Ajunta. The third (3) has an enlarged hall supported on pillars. The most splendid of these are at Ajunta; though the Dherwara at Ellora is also fine, and there are some good specimens at Salsette and Junnar.

(b) Buddhist chaitya caves form the second class. These are the temples or churches of the series, and one or more of them is attached to every set of caves in Western India, though none exist on the eastern side. Unlike the vihara, all these caves have the same plan and arrangement. All consist of an external porch or music gallery, an internal gallery over the entrance, a central aisle, which may be called a nave, roofed by a plain waggon vault, and a semi-dome terminating the nave, under the centre of which always stands a *dahgopa* or chaitya. In the oldest temples, the *dahgopa* consists of a plain central drum, surmounted by a hemispherical dome crowned by a *Tee*, which supported the umbrella of state, of wood or stone. These two classes comprehend all the Buddhist caves in India.

The third class of religious architectural remains in India consists of Brahmanical caves, properly so called. The finest specimens are at Ellora and Elephanta, though some good ones exist also on the island of Salsette and at Mahabalipur. In form many of them are copies of, and a good deal resemble, the Buddhist vihara. But they have not been appropriated from the Buddhists, as the arrangement of the pillars and position of the sanctuary are different. They are never surrounded by cells, as all viharas are, and their walls are invariably covered or meant to be covered with sculpture, while the viharas are almost as invariably decorated by paintings, except the sanctuary. The subjects of the sculpture of course always set the question at rest.

The fourth class consists of rock-cut models of structural Brahmanical temples. To this class belong the far-famed Kailas at Ellora; the Saivite temple at Dhumnar, and the Raths at Mahabalipur. The last are cut out of isolated blocks of granite, but the rest stand in pits.

The Indra Subba group at Ellora should perhaps form a fifth, but whether they are Brahmanical or Jaina is undecided.

The fifth or true Jaina caves occur at Khandagiri in Cuttack and in the southern parts of India, but are few and insignificant. In the rock of Gwalior fort, there are cut in the rock a number of rude colossal Jaina figures some 30 to 40 feet high, of some of their thirtankara, some sitting, some standing.

The Behar caves are in the neighbourhood of Rajagriha. The Milkmaid's cave and Brahman Girl's cave have inscriptions in the Lath character. They date about 200 B.C., and are the most ancient caves of India. The Nagarjuni cave and Haft Khanah or Satghar group are situated in the southern arm of the hill, at some little distance from the Brahman Girl and Milkmaid's cave. Another group is the neighbouring Karna Chapara and Lomas Rishi caves.

The caves of Udyagiri and Khandagiri hills, about 20 miles from Cuttack and five from Boban Eswara, are next in antiquity to those of Behar. They are built on the hills of Udyagiri and Khandagiri; the former are Buddhist and the older, the latter probably Jaina. Many of the

inscriptions are in the Lath character, and this gives their age as anterior to the Christian era. The frieze sculpture in the Ganesgompha is superior to any in India, and resembles that of the Sanchi tope at Bhilsa. In it there are no gods, no figures of different sizes, nor any extravagance. In the Buddhist caves here, there are no figures of Buddha, nor any images. In a Jaina cave near, on Khandagiri, the 24 thirtankara with their female energies are sculptured.

The Ajunta are the most complete series of Buddhist caves in India, without any mixture of Brahmanism, and contain types of all the rest. They are in a ravine or narrow valley in the ghat south of the Tapti.

At *Baug*, in a ravine or small valley in the ghat on the north side of the valley of the Tapti, are three ancient Buddhist caves.

The Karli caves are close to the high road from Poona to Bombay, about half-way down on the right-hand side of the valley as you proceed towards the sea. They are not so extensive as those of Ajunta, but they are purely Buddhist. The largest and most splendid chaitya cave temple in India which could be selected for reproduction by art, is the principal excavation at Karli, and it is also interesting as the oldest Indian work of the kind known to exist. Karli has numerous inscriptions in the caves in the Pali language.

The Salsette or Kenheri caves, in the island of Salsette, are purely Buddhist, but inferior to those of Ajunta or Karli. They are excavated in a hill in the midst of an immense tract of forest country, and Mr. Fergusson supposes their date to be about the 9th or 10th century of the Christian era.

Dhumnar, about 40 miles S.E. from Nemuch, but close to Chundivassa, contains Buddhist caves, with a Brahmanical rock temple behind. Those of Dhumnar, like the caves of Ellora, contain a strong admixture of Brahmanism.

The Ellora caves are excavated in a porphyritic greenstone, and are largely Brahmanical. They are in the face of the mountain overlooking the valley of the Godavery, close to Roza, the burial-place of Dowlatabad, and where Aurangzeb, Alamgir I., is interred.

Those of Elephanta are entirely Brahmanical, though perhaps of the same age as those of Ellora. The caves of Elephanta overlook the harbour of Bombay. They are cut in a harder rock than those at Ellora. These caves are in the island of Gharipuri, called by Europeans Elephanta, an island in Bombay harbour. Among the hundreds of figures there sculptured, every principal deity is found. Buddha is evidently, from his size and situation, a principal personage there.

Mahabalipuram, or the Seven Pagodas, between Covelong and Sadras, south of Madras, has been described by Dr. Babington in vol. ii. Trans. R. A. S., p. 258; and by Messrs. Chambers and Goldingham in A. R. vol. i. p. 145, and v. p. 69; and by Mr. Charles Gubbins in Bengal As. Soc. Journal. The Mahabalipur caves are entirely Brahmanical, and have been excavated after all the other series were formed (*Fergusson's Rock-cut Temples of India*).

The inscriptions of king Asoka consist of edicts and proclamations. King Asoka carved his edicts on the rocks at Dhauli in Cuttack, also at Girnar in Gujerat, at Kapurdagiri, near Peshawar.

wur, and on pillars erected in different parts of the country. In the thirteenth edict of the rock-cut inscriptions, he mentions having, about B.C. 258, formed treaties of alliance with Ptolemy Philadelphos, Antiochus Theos, Antigonos Gonatus, Magas of Cyrene, and Alexander, the king of Epirus and Macedonia, mentioned by Justin, for the protection or aid of his co-religionists in their dominions. They have been deciphered successively by J. Prinsep, Norris, Dowson; and elucidated by the works of Burnouf, Lassen, Wilson, Kern, Buhler, General A. Cunningham, Corpus Inscriptionum, and E. Senart in *Journal Asiatique*.

BUDGEROW. **ANGLO-HIND.** A boat in use on the Ganges. See Boat.

BUDH, in Hindu astronomy, the planet Mercury, and Hindus deem it fortunate to be born under this planet. Budh presides over Wednesday, Budhwar, dies Mercurii. In one of the zodiacs, he is represented seated on a carpet, holding in his hands a sceptre and a lotus; in another he is shown riding on an eagle; and elsewhere he is described as sitting in a car drawn by lions; and by Ward as sitting on a lion.

BUDH, an ancestor of a branch of the great Hindu people of a time prior to authentic history. He is traced by them up to Brahma, from whom he descends through Atri, Samudra, Chandra, or Soma, and Vrihashpati. Budh is said to have married Ila, daughter of Ikshwaku; and the descendants of this union were, in succession, Pururava, Ayu or Yaou, Nohas or Nohus, and Yayat. Ayu or Yaou is claimed by the Tartar and Chinese genealogists as their great progenitor; and from Yayat sprang three great lines, the Yadu, Puru, and Oora or Oorvasa, from each of whom came many dynasties ruling on the Indus, in Hindustan, Assam, Ava, and China. The great Iya was a branch of the Yadu; and five members of it formed Panchalika or Panchaldesa, and the seed of Bajaswa occupied all the countries on the Indus. Of the three lines, the Yadu, Puru, and Oora, the Yadu became the most illustrious. The descendants of Budh and Ila were known as the Chandravansa, Somavansa, or Induvansa, all of these meaning the Lunar race; but the fame of the Yadu eclipsed the prior designations, and throughout India the Lunar race came to be styled Yaduvansa. The Yadu held territories in Hindustan about Allahabad, but seemingly in small republican states, some of which were staked and lost at play. The relatives then fought for dominion, for eighteen days, on the field of Kuru Khet. There was no battle of armies, but a series of single combats, with treacherous, cruel surprises, during which nearly all the Yadu fell, and at the close, several of those remaining emigrated, amongst whom Krishna was one. The story is told in the Mahabharata. After the combats, the Yadu seem to have left the Ganges, and to have been expelled from Dwarica, to have crossed the Indus, passed Zabulisthan, and founded Gajni and Samarcand, but to have swept back on the Indus into Gujerat and the Indian desert, from which they expelled the Langha, Johya, Mohila, etc., and founded successfully Tannote, Derrawul, and Jeyaulmir. They are now known as the Bhatti of Jeyaulmir, the Jharajah of Cutch Bhooj, the tribes occupying Kerrowlee and Subbulghur on

the Chambal, and the Sumaitcha on the Chambal. The great Tuar tribe are also said to have been of Yadu origin. The Hya also was a branch of the Yadu, some of whom formed Panchaldesa or Panchalika, and the seed of Bajeswa at one time occupied all the countries on the Indus. The Bhatti and Jharajah thus trace their descent from Budh and Krishna, and they may be said to occupy the Indian desert from the Sutlej to the ocean. Budh seems to have been the first emigrant from Sakadwipa or Scythia, into Hindustan, viz. about B.C. 2400. Between Budh and Krishna was a period of 1200 years. But his descendants had deified Budh; and in Hindu mythology he is described as the son of Soma or Chandra or Indu, the moon, by Rohini. The date of the apotheosis of Budh is not known. Prior to the deification of Krishna, Budh was worshipped by all the Yadu as the great ancestor (Pitriswara) of the Lunar race. The principal shrine of Budh was at Dwarica, where he still receives adoration as Budha Trivikrama. But by the deification of Krishna, whose emblem was the eagle, Krishna's mysteries superseded the simpler worship of Budh. The worship of Bal, or the sun, as Bal-nath, and of the moon as that of Budh, seem to have co-existed, and an amalgamation had occurred, as the serpent was made to twine round the lingam, as at the shrine of Eklinga. Colonel Tod is of opinion that the original worship of Budh was monotheistic, and that prior to the rise of Vishnuism, the three idolatrous classes of Hindustan were the adorers of Surya and the descendants of Budh, who preserved the serpent sign of their race, and Krishna's followers, who adopted the eagle. There seem to have been 56 clans of the Indu, who were distinguished by names of animals,—takshac, the serpent; aswa, the horse; sassa, the hare; lomri or nomri, the fox, etc. etc.—*Tod's Rajasthan*, i. pp. 533-536.

BUDHA-BASARA. **SANSK.** Budha-kakara, TEL. *Cardiospermum halicacabum*. Popular superstition asserts that by eating its seeds, the understanding is enlightened, and the memory rendered miraculously retentive.—*Ell. Fl. Ind.*

BUDHA DAS, father of Upatisso, who built hospitals for cripples, for pregnant women, for the blind and diseased.

BUDHA GANGA, also Burha Ganga, the old bed of the Ganges, from which the stream has shifted. It is traceable below Hastinapur, and also below Soron and Kampil. The change of bed seems to have occurred since the time of Akbar.—*Elliot*.

BUDHA GHOSHA or Budha Ghosa, a Brahman, a native of Buddha Gaya, who became a convert to Buddhism. He lived in the early part of the 5th century A.D., nearly 1000 years after Sakya Muni (ob. B.C. 543). He went to Ceylon A.D. 430, and there compiled his great work, the Visuddhi Magga, or Path of Holiness, a cyclopædia of Buddhist doctrine. He was subsequently employed to re-write in Pali the commentaries, which had been handed down in Singhalese. Mahendra, son of Asoka, is supposed to have brought the Attha Katta, ancient commentaries in Pali, to Ceylon, and to have translated them into Singhalese, which Budha Ghosha, about A.D. 430, re-translated into Pali. His great eloquence obtained for him his titular name, meaning Voice of Buddha.—*Hardy's Eastern Monachism*.

BUDHA GUPTA, a king who governed the country between the Jumna and the Nerbadda, about the eighth century.

BUDH-ASHTAMI. **SANSK.** A Hindu holiday, from Budha, Mercury, and Ashtami, the eighth lunar day.

BUDHAYANA, a Hindu philosopher, who lived in Ilavratu, the country which surrounds Sumeru. He taught that God alone is unchangeable. He is said to have been the author of a law treatise, and to have arranged some parts of the Vedas into chapters.—*Ward*, iv. p. 30.

BUDH'S BEGGING POT, the Kasgal-i-Ali, is a circular bowl, 4 feet wide and 2 feet deep in the centre; the sides are 4 inches thick. It is of black porphyry. It is in a corner of the enclosure of the tomb of Sultan Wais, at Kandahar.

BUDHWAR, Wednesday, sacred to Budh, and named after him. Amongst Hindus it is a day propitious to any new undertaking.

BUDI. **HIND.** Among Hindus, the period of the month from full to new moon, called the dark half of the month.—*Elliot*.

BUDI-BUDAKI. **CAN.** A class of religious mendicants in Mysore.

BUDIDE. **TEL.** Ashes.

Budide Chatta, *Heliotropium coromandelianum*.

Budide Gummadi, *Benincasa cerifera*, *Savi*, referring to the white powder covering the fruit.

Budide Pannu, a fee for permission to bury a corpse.

BUDIL. **HIND.** *Picea Webbiana*, *P. Pindrow*.

BUDKHES. **HIND.** *Cordalis Govaniana*.

BUDLA, or Buddali. **KARN.** A leather bottle.

BUDLEYUN. **GREEK.** The mooql of the Arabians and Googal of India, names of bellium, also of the *Commiphora Madagascarensis* tree.

BUDRANJA BOYA. **HIND.** A small species of *Melissa*, found about Ajmir, where it is considered heating, and is used to cleanse the blood; one seer sells for two rupees.—*Gen. Med. Top.*

BUDRI. **BENG.** *Zizyphus jujuba*.

BUDSHUR. **HIND.** *Ephedra Gerardiana*.

BUDU. **HIND.** *Viscum attenuatum*.

BUDUMURU. **TEL.** *Sponia orientalis*, *Planch.*

BUFF.

Peau passées en buffles, FR.	Bufalo; Ouojo di
Peau de buffle; Bufflo, „	Bufido, IT.
Buffelhaute, . . . GER.	

A kind of leather prepared from the skins of thick-skinned animals, buffaloes, oxen, and the deer tribe.—*M'Culloch; Faulkner*.

BUFFALO.

<i>Bubalus Buffelus</i> , Blum.	<i>Bos bubalus</i> , Briss.
<i>Bhains</i> (male), . HIND.	<i>Karbo; Karbou</i> , MALAY.
<i>Mhains</i> (female), . „	<i>Moonding</i> , . . SUNDAN.

The buffalo inhabits Tibet, but is domesticated in India, the Indian Archipelago, and southern Europe. It is the only indigenous ruminant of Ceylon. They are frequently albinos, with pink eyes. The finest of the domesticated buffaloes of India are reared in the Hyderabad Dominions, west of Nirmul. Some naturalists are inclined to the opinion that there are two species. They are large, ungainly-looking animals, with great horns; but a domesticated breed, to the west of Nirmul, are of enormous size, almost like small elephants, and give a great quantity of milk. They are kept as milch kine, but are also employed as beasts of burden and draft; also to carry sacks on their backs, to plough with, to drag carts.

They have little or no hair, and their hides look like polished leather. They require to be in a moist climate, or to be immersed in water daily. They love to wallow in water or slimy mud, and often roll themselves to get a coating of it. A large male buffalo is more than a match for a tiger. It has large flat horns, some curved and some long (*spirocerus* and *macrocerus*). Its ribs are large, flat, and white. It is the buffalo, buffle, and büffel of the French and Germans. In the Hambangtotte country, in Ceylon, the villagers are much annoyed by the wild ones, that mingle with the tame when sent out to the woods to pasture, and it constantly happens that a savage stranger, placing himself at the head of the tame herd, resists the attempts of the owners to drive them homewards at sunset. Being an animal to which water birds are accustomed, the Singhalese train the buffalo to sport, and, concealed behind the animal, browsing listlessly along, they guide it by ropes attached to its horns, and thus creep undiscovered within shot of the flock. In the northern parts of India, they are similarly trained to assist the sportsman in approaching deer. One of these sporting buffaloes sells for a considerable sum. Between 1851 and 1855, Liverpool imported from India, annually, about 30,000 of its hides and 600 tons of horns. The male buffalo is frequently sacrificed by non-Aryan races, sometimes in considerable numbers; and only in 1859, the Government of Madras ordered the magistrate of the Krishna Division to forbid the cruel rite of Ammavaru, wherein bullocks are impaled alive to appease the goddess Devi, and avert cholera. On that occasion, in a small village, from twelve to twenty-four bullocks were sacrificed, as also several hundred sheep, and the heads of the sacrificed buffaloes were carried in procession on the heads of men. There are two generally recognised wild species of buffaloes in Africa,—the Cape buffalo (*B. caffer*), and the short-horned buffalo (*Bos brachyceros*).—*Bikmore, Travels; Stat. of Commerce; Tennent's Ceylon*.

BUFFALO THORN, *Acacia latronum*.

BUFONIA, a section of the 2d sub-class of reptiles, *Batrachia*, and order *Batrachia salienta*. The section Bufonia includes the families *Rhinodermatidae* and *Bufonidae*. *Bufo scabra*, the Bengal and Java toad, abounds in the marshes in the Lachen valley, adjoining Tibet. This is a remarkable instance of wide geographical distribution for a batrachian, which is common at the level of the sea under the tropics.—*Hooker, Jour.*

BUG, an insect belonging to the family *Hemiptera*, several genera of which occur in India. Amongst others are *Cantuo ocellatus*, *Leptoscelis marginalis*, *Callidea Stockerius*, etc. etc. Of the aquatic species, the gigantic *Belostoma Indicum* attains a size of nearly three inches. Some of them are most attractive in colour; a green one is often seen on leaves, and is quite inoffensive if unmolested, but if irritated exhales an offensive odour.—*Tennent's Ceylon*.

BUG. Insects known as coffee bugs have, in recent years, occasioned anxiety and losses to the coffee planters. In Ceylon, the first regularly worked estate was opened in 1825, but the bug does not seem to have appeared in large quantities till 1845, when, however, it began to spread with such rapidity, that in 1847 a very general alarm was taken by the planters, about the same time

that the potato, vine, and olive diseases began to create alarm in Europe. The coffee bug seems, however, to be indigenous in Ceylon, for the white bug has been found on orange, guava, and other trees, as also on beet-root and other vegetables, and the brown bug attacks the guava, hibiscus, Ixora, Justicia, and orange trees—indeed, every plant and tree, and even the weeds, on a coffee estate, particularly such as are in gardens.

When a coffee tree is attacked by the bug, it is deprived of its sap and its nourishment, whilst the fungus, which never fails to attend on the bug, prevents restoration by closing the stomates through which the tree breathes and respire. Bug, Mr. Nietner tells us, existed on the estates to an incalculable extent; none were believed to be quite free from it. Whole estates are seen black with bugs, i.e. with the fungus; and he asks, 'Am I wrong in saying that if there was no bug in Ceylon, it would at a rough guess produce 50,000 cwts. of coffee more than it actually does?' The value of this quantity on the spot being about £125,000, this sum represents the aggregate of the annual loss by bug sustained by the Ceylon planters.

Mr. Nietner's observations had been more particularly confined to the group of districts around Peacock Hill, but his list of the enemies of the coffee tree holds good in general for the entire coffee region of Ceylon. He tells us, however, that the brown and white bug and the black and white grub are the only universal and important enemies of the coffee tree, and that the destruction caused by Arhines, Linacodes, Zeugera, Phymatea, Strachia, and the coffee rat, appear to be of a more local and occasional nature, and are therefore of less importance. There are three pests which are chief,—the white bug, the brown bug, and the black bug.

The appearance and disappearance of the coffee bug, he tells us, is most capricious. It comes and goes,—now rapidly spreading over a whole estate, now confining itself to a single tree amongst thousands; here leaving an estate in the course of a twelvemonth, there remaining permanently. Sometimes spreading over a whole estate, sometimes attacking a single field, then leaving it for another and another. But the white bug prefers dry, and the brown, damp localities, the latter being found more plentiful in close ravines and amongst heavy rotting timbers than on open hill-sides, and it is probably to this predilection that the shifting of the insect is attributable. The bug of course seeks out the softest and most sheltered parts of the tree, the young shoots, the under sides of the leaves, and the clusters of berries. The injury done by the white bug seems more severe than that from the brown, but, not being so plentiful as the latter, it is of less general importance. The white bug is especially fond of congregating amongst the clusters of berries, which drop off from the injury they receive, and trees often lose their entire crop in this manner. The injury produced by the brown bug is the weakening of the tree, and is thus more general, but the crop does not drop off altogether nor so suddenly. With white bugs on an estate, the crop can hardly be estimated; with brown bugs it can.

The *White or Mealy Bug* is the *Pseudococcus adonidum*. The male insect is of a dirty brownish colour, and slightly hairy. It is very minute

(very much smaller than the female, only about half a line long), and resembles certain small Ephemeridæ or May-flies. The female is oval, brownish-purple, covered with a white mealy powder, which forms a stiff fringe at the margin and at the extremity of the abdomen two setæ. The larvæ and pupæ are active, and move about. The insects, in all stages of development, are found in Ceylon all the year round, chiefly in dry and hot localities, on the branches of trees, and on the roots to one foot under ground. Mr. Nietner says it is identical with the species naturalized in the conservatories of Europe. It is preyed upon by the *Scymnus rotundatus*, a minute beetle of the ladybird tribe, of the size of a pin's head, black and pubescent; also, the yellow-coloured and common *Encyrtus Nietneri* and the black-coloured scarce *Chartococcus musciformis*, two minute Hymenoptera (wasps), only $\frac{1}{4}$ " long, and the minute whitish mite, *Acarus translucens*. Of the members of this family of insects, the Coccidæ, some, as the cochineal and lac insects, are of great economical importance, but others, as the sugarcane blight of the Mauritius, the *Aspidiotus*, and the coffee bug, are excessively baneful to the gardener and agriculturist.

The male of the *Brown or Scaly Bug*, *Lecanium coffeæ*, is of a clear light pinkish-brown colour, slightly hairy, and very pretty. It is more delicate than the male *Pseudococcus*. The females when young are yellowish, marked with grey or light brown; and old individuals are light brown, with a dark margin. It affects cold, damp, and close localities 3000 feet in height, and the propagation, as in the white bug, is continuous. The brown bug is much infected with parasites, amongst which the most common are eight minute Hymenoptera (wasps) with brilliant colours; but a mite, the *Acarus translucens*, and the larva of the *Chilocorus circumdatus*, a kind of ladybird, also feed on the bug. In the larva state, the male and female brown bug are not distinguishable. The number of eggs produced by a female brown bug is about 700. Those of the white bug are not so numerous, but their propagation in Ceylon is continuous throughout the year, and this explains their great abundance compared with cold countries, where the produce is one generation of young annually. The brown bug, particularly the full-grown female, is dreadfully infested with parasites, which thus greatly help the planter. Indeed, it is a question whether coffee-planting could be carried on without their aid in the destruction of the bug.

The *Black Bug* is *Lecanium nigrum*, but the female only is known. In colour it is from yellowish-grey to deep brown, and almost black in age, and of a shield-like shape. It occurs alone, but also intermixed with the brown bug, but it is much less abundant, and therefore not demanding the planter's attention. Its occupation of a coffee or any other tree gives rise to the appearance of a glutinous saccharine substance, which has received the name of honey-dew. This is either a secretion of the bug, or the extravasated sap which flows from the wounded tree, or probably a combination of both. A fungus, or two fungi, the *Syncladium Nietneri* and *Triposporium Gardneri*, seem to depend on this for vegetation, as the honey-dew and the fungus disappear with the bug.

Another bug, the *Strachia geometrica*, of a yellowish colour, but marked with grey and orange on the upper side, was found at Badulla. It feeds upon the juice of the young berries, three per cent. or more of which were said to have suffered from it. It is allied to the green or fœtid bug; but though it may occasionally cause destruction, there is no fear of it ever becoming a serious nuisance.

One of the Aphidæ, *Aphis coffeæ*, the coffee louse, is found in small communities on the young shoots and on the under side of the leaves of the cocoanut tree, but the injuries it occasions are insignificant.

Several caterpillars, the *Ala lactinea*, the *Orgyia Ceylanica*, *Euproctis virguncula*, the *Trichia exigua*, *Narosa conspersa*, the *Linacodes graciosa*, and a species of *Drepana*, are found on the coffee trees, but they do not cause much injury. Another caterpillar, however, though fortunately not abundant, the *Zeuzera coffeæ*, destroys many trees, both young and old, by eating out the heart. It resembles the caterpillar of the goat-moth of England, and is as thick as a goose quill. It generally enters the tree 6" or 12" from the ground, ascending upwards. The sickly drooping of the tree marks its presence.

Black Grub.—The larva of the moth called *Agrostis segetum* is the very destructive black grub. This pest is about an inch long, and is most abundant from August to October. The caterpillar lives in the ground, but comes out at night to feed, and is very common and injurious. They attack not only coffee trees, but all sorts of vegetables and flowers, and are very destructive to gardens and in the field, as they eat everything that is artificially raised, despising grass and weeds. They generally appear only on certain fields, and will not go over an estate. The insect is not confined to Ceylon; its ravages are well known in India, at the Cape of Good Hope, and in Europe, where it injures the grain and beet-root crops. In Ceylon it only attacks young coffee trees, gnawing off the bark round the stem just above the ground. Where the trees are very small, they are bitten right off, and the tops sometimes partially dragged under the ground, where the grubs may easily be discovered and dislodged. The damage which they inflict on plantations may be estimated, when it is mentioned that Mr. Nietner lost through them in one season, in certain fields, as many as 25 per cent. of the young trees he had put down.

The larva of a little moth, the *Galleriormorpha lichenoides*, and three caterpillars of the *Boaraina leucostigmata*, *B. Ceylanica*, and *Empithecia coffearia*, are found on coffee trees and other plants from September to December.

The larva of the *Gracillaria coffeifoliella* mines the coffee leaves; it is very common, but of no importance to the planter.

The ravages of the large, well-known, beautiful locust, the *Phymatea punctata*, with its scarlet abdomen and yellow and bronze above, are not continuous in the coffee tree, but are occasionally very annoying. A swarm settled on a field of one-year-old coffee and gnawed the bark off the stems, causing them to throw out many shoots, and permanently disfigured five per cent. of the trees. They do not touch the Illuk grass, *Saccharum Konigii*, Retz, but seem only to attack cultivated plants and trees. At Tangalle they

destroyed tobacco plantations, and at Matillee in Kandy the native grain crops were injured by these locusts. The larvæ and pupæ are as destructive as the perfect insects; but this seems, fortunately, the only species of locust that does any real injury in Ceylon, and this injury is in importance not to be compared with that done by other species in other countries.

White Grub.—Under this name are included the larvæ of various Melolonthidæ, the cockchafers of Ceylon, which do much harm to coffee plantations, young and old, by eating the roots of the trees. Mr. J. L. Gordon of Rambodde considers the white grub to be by far the greatest enemy of the coffee trees which the planter has to contend with, as he never knew a single tree recover after their attack; and he adds that they had destroyed, at Rambodde, in two years, between eight and ten thousand fine old coffee trees. Mr. Gordon used to dig up the soil at the foot of the trees, and take out such grubs as he could find.

Weevils.—The family of the weevils is one of the most extensive amongst the beetles; and in Ceylon, as in Europe, many of its members do much injury to agricultural produce. Mr. Nietner had seen nearly the whole sweet potato (*Batatas edulis*) crop of the Negombo district destroyed by one of them, the *Cylas sturcippennis*. The common rice weevil *Sitophilus oryzae*, is another instance; and one of the cocoanut tree destroyers of the Ceylon low country, the *Sphærophorus planipennis*, belongs also to this family. The Arhines? destructor, a beautiful green weevil, Mr. Nietner had not found do any injury to coffee trees; but Mr. J. Rose of Matturatte, writing to him, says, 'The mischief they do is plentiful, and if they were as plentiful as the bug, they would be the planter's worst enemies. Five or six acres were completely covered with them, and they consumed almost every leaf. Year after year they appeared upon the same place. One year they appeared upon a neighbouring estate in great force, and ran over at least forty acres. The same thing occurred on three other estates.'

The *Acarus coffeæ*, or coffee mite, is so small as to be hardly perceptible to the naked eye. It is closely allied to the red spider of the hothouses of Europe. Nearly all the year round, but chiefly from November to April, it feeds on the upper side of the coffee leaves, giving them a brownish sunburnt appearance. Individual trees suffer from its attacks, but the aggregate damage from it is not great.

The coffee rat of Ceylon, the *Golunda Elliotti*, occasionally commits much damage, seemingly to get the bark, for they do not seem to eat the berries. With their long sharp incisors they bite off with great smoothness the smaller and younger branches, generally an inch from the stem; and should the plants be quite young, just taken from the nursery, they bite them right off a few inches from the ground, and carry them to their nests in hollow trees. They appear irregularly at intervals from the jungles, and there is hardly an estate that does not now and then receive a visit from them. The natives of Ceylon say that their food in the jungles is a species of *Strobilanthes*, called Nilu in Singalese, and that the rats only issue from their forest residence and attack the coffee estates when their forest food fails.

The injuries from other animals are not serious. A squirrel, the *Sciurus Layardi*, which eats the coffee berries, is common on estates; the pulp alone is digestible, and the coffee beans are dropped on logs of wood and on the ground. Jackals and monkeys occasionally do the same; this is called parchment coffee. A deer will now and then come from the forest and nibble the tops of the young trees.

Mantis tricolor, *Nietner*, the Mantis of the coffee tree, is green, lower wings reddish, with large blackish spot at the posterior margin. The female is 1 inch long, with $1\frac{1}{2}$ inch of an expanse of wings. The male is considerably smaller. The eggs are deposited upon coffee leaves, in cocoon-like masses of $\frac{1}{2}$ of an inch in length, but drawn out further at each end. As to the remedies to all these plagues, Mr. Nietner tells us that several means of checking the extension of the bug have been proposed and tried. Amongst these, the introduction of the red ant; but their bites are so fierce and painful, that the coolies refuse to go amongst the trees while the ants are there. Rubbing off the bug by hand has been tried, but it can only be attempted upon young trees without crop; Mr. Nietner, although allowing that an immense quantity of bug is thus destroyed, is nevertheless of opinion that the effect is but trifling. He thinks that the application of tar to the roots is a good suggestion, although he is obliged to admit that hitherto no important results have been achieved by it. He adds that high cultivation seems to have the effect of throwing it off. But as the bug seems to depend on locality, Mr. Nietner does not look for any beneficial result so long as the physical aspect is unchanged. He thinks that if the open, warm, airy pattenas were cultivated, which the experiments on a large scale, tried at Passelawa, show that they can be, the brown bug, which is the great destroyer, would not find the conditions favourable to its existence; or perhaps, if estates as a rule were made smaller than they generally are, if the reduction in acreage were counterbalanced by a higher system of cultivation, universally carried out, the bug would not be so numerous as it now is (Mr. Nietner). In the Peninsula of India, *borer* is a name given to the larva of certain cleopterous beetles, which injure coffee trees. There are two, the white and red borer, and the chief of these is the *Xylotrechus quadripes* of Chevrolat. The large and rapid introduction of coffee-growing into Ceylon and India has shown that the plant is liable to be attacked by many enemies, and ignorance of that has been the cause of much loss. Coffee trees in Coorg have also been injured by the rot, a disease resulting from improper pruning. The rot attacks and decays the centre of the stem. In Coorg, when the tree is attacked by the borer, the leaves become yellow and droop. The insects are generally about the diameter of a small quill, are always confined to the wood, and never enter the bark until the larva has done its work, passed through the pupa stage, and is about to escape in the form of a beetle. The eggs are deposited by the females near the root of the tree, and the pupa borers tunnel up the heart of the plant.—*Nietner; Dr. Bidie on Coffee Planting*. See Coffee.

BUG of Miana. See Argas.

BUGGLECONDA, a steep basaltic hill rising

about 1200 feet above the plain near Innaconda, in the Guntur collectorate of the Madras Presidency, and remarkable for the frequent earthquakes which occur at it. No crater has been observed, but it has three peaks, the central one being the highest. The name, meaning the charcoal hill, has been given to it from the black colour of its rocks. About the year 1840 earthquakes occurred several times in one month, and large stones rolled from the hill to the plains. Heynes says (Tracts, pp. 108-117) the Chicota hill has frequent earthquakes, and that the Ongole hill seemed to affect the compass.

BU-GHYEE-PHYOO. BURM. *Clerodendron viscosum*, *Vent.*

BUGIO, in Japan, a civil officer who exercises controlling powers over collectors, interpreters, and other inferior officers. See Japan.

BUGIS or Bugi, a bold, self-reliant, maritime people of Celebes, of which they occupy the northern part, and are known, in consequence, as Macassar men. The Bugis, originally from the same stock as the Malay, are superior to all other natives of the Archipelago in their spirit of adventure. They are a brave, active, haughty, fierce, and vigorous race. They love justice, and are faithful to their bonds, but seldom forgive injuries. Under the name of Macassars, they form the flower of the colonial troops in the Dutch service. Macassar was the most notorious place in the Eastern Archipelago for the Bugis people to run amok. On the average, one or two occurred in the month. It was in fact the national mode of committing suicide amongst the natives of Celebes, and was therefore the fashionable mode of escaping difficulties. Ten or twenty persons were sometimes killed and wounded at one of the amok. Stabbing and killing at all he meets, the amok runner is at last overpowered, and dies in all the excitement of battle. It is a delirious intoxication, a temporary madness, absorbing every thought and action (Wallace, i. p. 174). Although they bear some personal resemblance to the Malays, arising probably from a common origin, in every quality but courage they are essentially different. Exposed to the same temptations, and most skilful and adventurous navigators, they have never adopted the occupation of piracy, but abhor and resist it, and defend themselves against the Malay prahus with the most heroic and desperate valour whenever they are attacked, proceeding, if overpowered, to blow up their vessels rather than submit. The poorest of these hardy islanders is as impatient of a blow as a European gentleman; and it is permitted to any one to avenge an affront by the death of the person who offers it. A more than Spartan training is bestowed on children. The males at the age of five or six are removed from their parents, lest they should be made effeminate by indulgence, and they are not restored to their family until they are of an age to marry. They are the Phœnicians of the Indian Archipelago; and there is not a coast, from the northern shores of the Australian continent to the Malay Peninsula, where their ships are not habitually seen. They leave their country in the beginning of the eastern monsoon on a trading voyage, and proceed westward until they reach Singapore. With vessels of peculiar build, of from forty to fifty tons burden, they conduct almost the whole carrying trade of the

Archipelago. They own at least 1000 ships, the outward cargoes consisting of cotton cloths, gold dust, edible birds' nests, tortoiseshell, trepang or sea-slugs for Chinese epicures, scented woods, coffee, and rice; and in spite of the jealous and restrictive policy of the Dutch, they have greatly contributed to diffuse British manufactures throughout the islands of the eastern seas.

In the beginning of the western monsoon, they go in great numbers to the Aru islands, which is the principal rendezvous for the people of Ceram, Goram, the Ki islands, Tenimber, Baba, and the adjacent coast of New Guinea, a distance from Macassar of upwards of 1000 miles. They carry English calicoes, cotton goods of their own manufacture, Chinese gongs, and arrack; and the return cargoes are tortoiseshell, mother-of-pearl shell, pearls, birds of paradise, and trepang, the Malay term for all the kinds of holothurians or sea-cucumbers. Of trepang alone about 14,000 pikuls are yearly shipped from Macassar, of a value of 600,000 dollars, or £150,000. It is estimated that the annual value of goods carried by the Bugis to the Aru islands from Macassar alone is 80,000 dollars, or 200,000 guilders; and of those taken to the Aru group from other places, 20,000 dollars, or 50,000 guilders. Bugis are subdivided into many nations,—united, however, by the common ties of similar language and similar institutions. There is but one of their tribes distinguished for maritime enterprise and commercial spirit, the Wajo or Tu-wajo people. Their original site is in the interior of Celebes, on the northern banks of an extensive fresh-water lake, 24 miles in breadth, from which a river issues, to fall into the Gulf of Boni. Their voyages extend from Siam to N. Guinea, and from Manilla to Acheen. They are the great carriers of the Archipelago. In the year 1825 they had 786 trading prahus. Amongst the Bugis traders to the east, Kilwara is their metropolis. It is a mere sandbank, lying between Ceram Laut and Kissa, and offers good anchorage in both monsoons. Horses are bought at Gorontalo in Celebes.—*Quarterly Review*, No. 222, p. 502; *Bikmore*, 101; *Oriental Herald*, vii. p. 140.

BUGLAK, a tree of Chutia Nagpur; its bark, powdered, is used as a substitute for glue.

BUGLI. HIND. *Spiraea Lindleyana*.

BUGO, of the Philippines, *Chavica scriboo*, *Miq.*

BUGRA. HIND. *Gynandropsis pentaphylla*.

BUGRI. HIND. *Cleome ruta*.

BUGTI, a wild Baluch tribe on the western bank of the Indus, near Shikarpur, in the hills east of Lehrat. They are one of the great Rhind tribes. Some of them are serving in the Panjab cavalry, and many were in the Sind service. They are subjects of the khan of Kalat. The Bugti and Murree occupy the mountain district which extends eastward to the south of Sind and Kutchi.

BUG-TRORA. MAHR. *Tecoma undulata*.

BUHARA. BENG. *Terminalia rubrica*.

BUHOARI. BENG. *Cordia myxa*, *C. latifolia*, *Terminalia bellerica*, *T. Moluccana*.

BUHOW, a tribe lying south of Kashmir, little reclaimed from barbarism.

BUI, HIND., seemingly from Bhoom, land, uncultivated land. The name of several plants,—the *Crotalaria burhia*; *Agathotes*, *sp.*; *Franciauria crispa*; *Ballota limbata*; *Plectranthus rugosus*; *Ærua bovii*; *Pandera pilosa*.

Bui Champa, *Kæmpferia rotunda*.

Bui-Choti, *Anabasis multiflora*.

Bui Madarau, *Achillea millifolium*, *Artemisia Indica*, *Artem. vestita*, *Wall.*

Bui-Mung, and Bui-Singh, *Arachis hypogæa*.

Buin Aonlah, *Phyllanthus niruri*.

Buin Kaviti, *Feronia elephantum*.

BUILDING MATERIALS. In the Peninsula of India, all the most ancient buildings are of stone, while the edifices of the past five hundred years, comprising some of the most stupendous piles, are of brick. The great religious institutions of Sri Sailam in Cuddapah, at Conjeveram, Chellambaram, Srirangam, the temples at Tanjore, Gangondaram, and Tribhuwanam, the ruins at Bijanagar, Bijapur, Gogi, and Kulburga, the pagoda at Leepichhi in the Bellary, and that at Tarpatri in the Cuddapah district, monuments of ancient Hindu and Mahomedan art, are of stone. Those connected with architecture, sculpture, and painting, called into being by the exigencies of religion, always the best stimulus to works of design, have suffered more from sectarian zeal than the ravages of time, and they are widely scattered over the length and breadth of the land. Sculptured stones, fortifications, temples, and works of irrigation are found in every direction, and not only impart a knowledge of the state of science and civilisation at various periods, but throw a valuable light on other subjects of inquiry. The recent advent of the British nation into India, the efforts needed to obtain a standing-place, and the duty devolving on them of introducing useful public works, have all hitherto prevented them from engaging in ornamental architecture. The cupola of the Presbyterian church at Madras, built by Colonel de Haviland, is good, and there are a few ornamental buildings in Calcutta and Bombay. But works such as the Ganges Canal, the Southern Coast Canals, already extending almost from the Brahmaputra and the Ganges to the western coast, the great dams across the Godavery and the Kistna, the tunnelling of the Ganges and Indus, the roads everywhere, from Cape Comorin to Tibet, the railroads with their stupendous bridges, and the irrigation canals, already in vastness and in public usefulness, surpass all that Aryan, Hindu, Buddhist, Pathan, Moghul, or Arab rulers had done during their previous 3000 years of occupation. The Moghul dynasties of India, besides palaces and tombs, porticos and mosques, left a few useful sarai and bridges, but many of these were erected by private persons.

In the northern part of the Peninsula, from the Central Provinces to the Godavery, is a great greenstone area, the trap flowing over and covering sedimentary rocks; and in the east, in the province of Hyderabad, is a vast Plutonic outburst of granite. On the south of this granitic and volcanic rock there had been an estuary, extending from north of Madras to the Kistna, and from the Bay of Bengal up the Kistna and Pennar to the sources of the Gutpurba and Malpurba, and it is now filled with distorted, broken, upraised limestone, blue slate, and sandstones, from near Curcumberry, through Tarpatri, Cuddapah, Kurnool, to Kaladgi and Belgaum. To the south of that narrow gulf is the great granitic tract of Bellary and Mysore, succeeded further south, about Trichinopoly and Madura, with other

limestone beds, both fossiliferous and non-fossiliferous; and from these volcanic, metamorphic, and aqueous-formed rocks, building stones are drawn.

Laterite rock is a clay iron ore peculiar to India; it is widely diffused, and has been largely used in India. The Arcade Inquisition at Goa is built of it; also St. Mary's Church, Madras, and the old fortress at Malacca.

Trap-Tuffa, sometimes white, sometimes greenish or purple, resembles laterite in the quality of being easily cut when raised, afterwards hardening on exposure to the air. It is used as a building stone, and suits well for basins, troughs, and aqueducts; it is not very extensively employed.

Littoral Concrete is invariably found close by the sea-shore, and is so named from its resemblance to the artificial stone formed by the cementation of sand, gravel, or other coarse material, by lime or mortar. It is composed of the material prevailing on the shores,—of shells, sand, gravel, and pebbles,—and varies in its character with the rocks in the neighbourhood, being micaceous towards Cochin and Tellicherry, from the quantity of sand and other nodules from the granite and gneiss; gravelly to the north of Bombay; and around it, composed almost entirely of fragments of shells. Along the shores of Sind, Arabia, and the Red Sea, though the material composing it is abundant in a position similar to that in which it exists on the Malabar coast, but it is nowhere cemented into stone. Even in Bombay the cementation is far from invariable. The principal quarries are at Versova, about twenty miles to the north of Bombay, where the shore is sheltered by a vast dyke of basalt, formerly submerged.

The sand is first removed, and the rock is smoothed on the surface. A space about twelve feet each way is next divided into slabs one foot square, the grooves between them being cut with a light, flat-pointed, single-bladed pick. These are raised successively by a tool something between an adze and a mattock, a single stroke of which is in general sufficient for the detachment of each from its bed. The blocks thus cut out and raised being laid aside, the bed is once more smoothed, and the operation resumed, till the pit reaches the depth of six or eight feet. This variety of building material is brought in vast quantities to Bombay, where a large portion of the native houses are built of it. It is not very strong, but, with the admirable cement employed, it makes a good and economical wall.

Trap.—In the Dekhan, the most massive structures are raised and carved on trap with delicacy and correctness. The favourite material for the over-ground Mahomedan tombstone is basalt, and, after many hundred years, the Arabic letters, carved in relief, are as sharp as on the day they were first cut. The vaults and domes of tombs and temples are commonly bolted with iron from top to bottom; and in many cases, instead of scaffolding, the structure is surrounded with a rough wall, ten or twenty feet off, the interval between being filled up with earth; a long inclined plane serves for raising the stones. A magnificent structure of this sort, the tomb of one of the Gwalior princes, has stood half-finished near Poona since the early part of the 19th century, and here native architecture may be seen in perfection in all stages of advancement.

The only other building material at the Bombay Presidency consists of a fine-grained variety of nummulite, like Bath oolite, called, from the name of the place whence it comes, Porebunder stone.

All over India, bricks, laterite, and clay are largely used; in the Mauritius, stone and slabs of coral rock. In many parts of Bengal, wattle-work is in use for houses.

Since Indian railroads were commenced, with their great spanning bridges, the rocks of all their neighbourhoods have been largely utilized; and buildings formed of the greenstones, granites, limestones, clayslate, and sandstones are everywhere to be seen. Throughout the great volcanic district of the Dekhan, the various kinds of greenstone are largely used. On the blue slate formation, along the valleys of the Kistna and Tumbudra, and on the compact limestone formation on each side of these rivers, houses have ever been formed from these materials; but the favourite rock for ornamental purposes in the Buddhist and Hindu temples of peninsular India, is the dark basaltic greenstone, often, from its high polish, called black marble. In an ancient underground temple at Bijapur this basalt is alone employed. The Brahmanical and Buddhist caves of Ellora and Ajunta, and the smaller caves at Mominabad, are excavated out of the greenstone and greenstone amygdaloid. At Ellora they are about twenty in number, in the face of the mountain, almost scarped as it falls into the valley of the Godavery; a similar number are at Ajunta, in a ravine near the scarped ghats overlooking Kaundesh. Those on the right bank of the Irawadi, near Prome, look on the river. In Madras and Calcutta, and in Indian towns generally, brick is the ordinary building material. In the whole of Burma and the Tenasserim Provinces, the houses are on posts, and built of wooden planks with shingled roofs.

Of the rocks of aqueous origin, the sandstones, slates, and limestones, the whole of the valley of the Kistna, and great parts of the valleys of its affluents, the Gutpurba, Malpurba, Bhima, Tunga, Bhudra, and Tumbudra, and much of the valley of the Godavery and of the valleys of its northern affluents, have limestone, clayslate, and sandstone rocks, and the houses and more extensive buildings are all built of these. The compact limestone of Kurnool, westward to the Bhima, is an excellent building material.

The whole of the Kymore range in Shahabad is described as of mountain limestone, which also shows itself in the valley of the river Sone as far at least as Mungeysur peak in Mirzapur; and it crops up at Rhotas, forming a sloping base to the precipitous sandstone rock. Below the mountain limestone is one of a plush grey colour, mixed with occasional crystals of calc spar; this, like the Kurnool stone, is admirably suited for lithography. Below the latter, in Kymore, is a limestone of a hard, tenacious, almost indestructible composition, admirably suited for building.

The sandstones of the Kymore range have a high commercial value at Chunar and Mirzapur, being used as flagstones and for ornamental purposes, the proximity of the Ganges affording an easy river carriage; otherwise they are the worst and most destructible description of stone in the range. The millstones of Chynepore, Sasseram, and Tilowthoo (perhaps also Akbarpur), are famous, but must always be dear in a distant

market, for want of river carriage. The Sone causeway and the Koylwan railway bridge are built of the dense sandstone of Sasseram; little quantities are found in the higher portions of the range towards Rhotas. The best stone, while easily workable, is almost as hard as granite, and may be had of any colour, white, crystalline, blue, grey, and all shades to a dark red.

Flexible sandstone is found at Ulwar, Jhend, and Jubbulpur.

At the Panjab Exhibition held at Lahore, there was a good collection of building materials from Sahi Balabgarh in the Dehli district, including the red, the spotted, and the light-coloured sandstone so much used in the large buildings of Upper Hindustan; and from the same place were polished blocks of white marble, and a pretty dappled grey marble, called Narnaul marble, from the Hissar district. From the Kangra district there was sent grey limestone, sandstone of two sorts, both good for building, and granite. Some nice workable sandstone sent from Madhopore must come from the hills above that place. From Kashmir there was some black marble, and some polished slabs of serpentine, which is found at Tashgaon in Little Tibet. The Salt Range, Jhelum, and Shahpur districts possess good building stones, sandstone, and calcareous sandstone; from Jhelum were specimens of marble which might become useful for building, with gypsum or alabaster of the same hills. See Architecture.

BUIST, Dr. GEORGE, LL.D., a voluminous writer on general and scientific subjects relating to India, viz.: Manual of Physical Research, Report of Meteorological Observations at Bombay in 1842 and 1844; On the Saltness of the Red Sea, Bom. Geo. Trans. ix. p. 39; Catalogue of Remarkable Hailstorms in India, *ibid.* p. 184, Rep. Brit. Ass., 1850; Notice of Remarkable Meteors in India, Bom. Geo. Trans. ix. p. 197, Rep. Brit. Ass., 1849 and 1852; Outline of the Operations of the British Troops in Sind and Afghanistan, Bombay 1843; Annals of India for 1848-49; On Woods in India in 1849, Edin. Phil. Jl. (Jameson's), 1851, ii. p. 52; On the Evidence of the General Upheaval and Depression around the Sea-shores of India and Northern Europe, *ibid.* 1851, Edin. Ph. Jl. 1851, Bom. Geo. Trans. Reports, 1850-51, Rep. Brit. Ass., 1851; On the Visible Appearance of the Seasons in Western India, without reference to Instrumental Observation, Rep. Brit. Ass., 1851; Desultory Remarks on the Oriental Sculptures or the Runic Stones of Scotland, Bom. Ass. Trans. ii. p. 43, Bl. Ass. Trans. 1851; On a Cheap Form of a Threshing Mill employed in England, and well suited for India, Bom. Agri. Trans., 1842; On the Various Forms of Windmills in use in Europe and Egypt, with Water-raising Machines made use of in the East, with numerous illustrations, Bombay 1848, folio; On the Connection betwixt Oriental and Scandinavian Antiquities, Bl. Ass. Trans., 1852; On the Volcanoes, Volcanic Phenomena, Hot Springs, etc., betwixt the line and 32° N., Bom. Geo. Trans., 1852, x.; On the Geology of Bombay and the Adjoining Islands, *ibid.*

He accepted employ under the Government of India at Allahabad, but became ill, and returned to Calcutta, where he died. He was one of the most distinguished students of physical science in

India, and one of the veterans of the Indian press.—*Dr. Buist's Catalogue.*

BUJI BABBAR. HIND. *Eriophorum comosum*.

BUJLO. HIND. *Oreosieris lanuginosa*.

BUJOOR. BENG. *Corypha elata*.

BUJRA. HIND. *Cleome ruta*.

BUJRA, a large, commodious, but generally cumbrous and sluggish boat, having more pretensions to comfort than speed, used for journeys up the Ganges. See Boat.

BUK or BUKA. BENG. *Agati grandiflora*.

BUK. HIND. Land recovered by the recession of a river. Bukara, land left by a river, but rendered useless by a covering of sand.

BU'KALAMUN. ARAB. Chameleon.

BUKAN. HIND. *Eclipta erecta*, *Lippia nodiflora*.

BUKAYUN. PERS. *Melia sempervirens*.

BUKBUR. ARAB. Fruit of *Cassia fistula*.

BUKCHI. HIND. *Conyza anthelmintica*.

BUKEPHALA, a city built on the scene of Alexander's battle with Porus. Strabo says it was on the left bank, where Alexander had crossed; Plutarch says it was near the Hydaspes, where Bucephalus, Alexander's horse, which was killed here, was buried; Arrian, Diodorus, Curtius, and Justin say it was opposite to Nikæa. According as we follow Strabo or Arrian, it was at Dilawar or at Jalalpur, each of them 6 miles from Mong, the battlefield of Nikæa.—*Cunningham*, p. 177.

BUKHARA, the capital of a khanate in Central Asia, the chief point of Central Asiatic trade. Its name has been supposed to be derived from Vihara, a Buddhist monastery, but Mahomedan authors say that Bukhar meant Majma-i-ilm, i.e. a place for the collection of knowledge, that is, a college or school. Turks pronounce the word Bukhara, while the Persians say Bokhara.—*Vamberg, Bokhara*, p. 14.

BUKHARIA, also called Little Bukharia, also Eastern Turkestan, bounded on the north by Mongolia, on the east by the Shami or Kobi desert, on the west by Kokhand and Balakhshan, and on the south by the Tsung Lung or Korakoram range of hills, which separates Little Bukharia from Little Tibet. The inhabitants of Little Bukharia speak Turki, and profess the Mahomedan religion. The Uigour Hoei-hou, called simply Hoei-hoei, under the Mongol dynasty of Yuan, were Mahomedans, and this name is applied by the Chinese to all those of the same religion. The inhabitants of the towns of Little Bukharia are in part descendants of the ancient Uigour or Hoei-hou, and consequently Turk; in part Sarti or Bukharians, who are scattered as merchants all over Central Asia, and who are Iranians. There are many of them at Peking, Hang-chu-fu, Canton, and other commercial cities of China. Their mother tongue is Persian; but they also speak the oriental Turki, which is the general language of Turkestan, and the most diffused in Little Bukharia. The Uigour writing character was the original source of those still used by the Mongol and Manchu, and was itself almost certainly derived from the old Syriac character through the Nestorians. The modern Tartar characters are written (and, it is presumed, read) in vertical lines from top to bottom of the page, the lines succeeding each other from left to right. What Uigour meant with Mongol authors is doubt-

ful, but the people and language so called by the western Asiatics were Turk. Captain Valikhanoff speaks of the language now in use at Kashgar as being Uigour, but it is not clear whether he means that this term is known to the natives.—*Russians in Central Asia*, p. 67; *Yule, Cathay*, i. p. 206; *Timkowski's Journey to Peking*, i. pp. 6, 378-79.

BUKHO, the Karen priest and physician.

BUKHUR. ARAB. Incense or fumigation.

BUKI. HIND. Equisetum debile.

BUKIT. MALAY. A hill. Bukit gadong, a locality in the Malacca district occupied by the Jakun race.

BUKIYANI, an industrious cultivating tribe of Mahomedans in the Multan division of the Panjab. They were Chauhan Rajputs, and about the 16th century became converts to Islam.

BUKKAPU. TEL. Cæsalpinia sappan.

BUKKAR-ul-WASH. ARAB. The wild cow.

BUKKUR, a fortified island in the Indus river.

It is in the centre of the stream, nearly opposite the town of Rori; and on the western bank is Sikkur, now called Victoria on the Indus. Bukkur is in lat. 27° 42' 45" N., and long. 68° 56' 30" E. It is a limestone rock 2400 feet long, 900 broad, and 25 in height. On its north is the holy islet of Khaja Khizr or Jind Pir, and on its south is that of Sudh Bela. It has been held successively since the 14th century by the Sumra Rajputs, the Delhi, Kalhora, Afghan, and Talpur rulers, and was ceded to the British in 1839.—*Burton; Postans; Imp. Gaz.* See Bakkar.

BUL. SANSK. Force, strength; pronounced Bal, also Bil.—*Ell.*

Bul-Arati, a name of Indra as the destroyer of the giants.

Bul-Bhog. HIND. Taking forcible possession of property; from Bul, force, and Bhog, wealth.

Bul-Kut, rent taken in advance.—*Elliot, Glossary.* See Bal.

BUL.A. BENG. Paritum tortuosum.

BULAHUR, HIND., also Buladhuur, from bul-lana, to call; a village servant in Allahabad district serving as a guide or messenger.—*Ell.*

BULAK, said by Niebuhr (i. p. 63) to be the Latopolis of the ancient Greeks. Bulak has been for centuries the river port of Cairo, although originally a mile distant from it, and it has now become incorporated with that city. The Museum of Egyptian Antiquities, a magnificent collection, entirely unrivalled of its kind, was established at Boulac by Ismail, Khedive of Egypt.

BULANDSHAHR, a town often called Baran, in the N.W. Provinces, on the west side of the Kali Nadi. It gives its name to a district in the Doab between the Ganges and the Jumna, between lat. 28° 3' 30" and 28° 42' 45" N., and long. 77° 20' and 78° 31' 45" E.; area, 1910 square miles, and population, 936,667. It is said to have formed part of the great Pandava kingdom ruled over from Hastinapur, a city which was cut away by the Ganges. Bulandshahr was approached by Mahmud A.D. 1018, and its people embraced Mahomedanism. A.D. 1193, Kutub ud Din captured it from the Dor rāja by the treachery of his cousin Ajaypal, who accepted Mahomedanism, and whose descendants still hold lands there. Rajputs since, for a time, occupied the district, expelling the Meo. It has been under the Delhi and Mahratta rule, and in 1803 became British

territory. During the mutiny the Gujar and others held the district from the 21st May to the 4th October. The people are Hindus, Rajputs, Mahomedans, with Chamar, 146,149; Jat, 56,453; Lodha, 51,513; Gujar, 48,786; Khakrob, 29,501. Coins of Alexander the Great and of the Indo-Bactrian kings are being found at Baran to the present day.

BULAQ. HIND. A jewel worn in the septum cartilage of the nose.

BULAT. BENG. Phaseolus mungo, *Linn.*

BULAT-WÆLA. SINGH. Chavica seriboo.

BULBASSI, a Kurd race, composed of—1. Kabaiz, the reigning family; 2. Manzoor; 3. Mamash; 4. Piran; 5. Rummook; 6. Sinn and Taafah, who together make one tribe. They are all predatory. The chiefs of tribes are called Muzzin. The price of blood among the Bulbassi is 22 oxen; but it may be made up in other effects, to which often a nominal value is attached, more than twice the real amount, when the affair is to be compounded amicably. The crimes punished with death are adultery, seduction, and such like. The Bulbassi are endogamic. They have courtship among them, and carrying off a girl by the lover is common. When a chief dies, if his eldest son is incapable, the best of the brothers succeeds. In their own country the Bulbassi do not willingly acknowledge any superior, either Turkish or Persian, but when they descend into the regions of Karatchock they pay a tribute of sheep to the Bey. Most of the principal people among them possess a complete suit of mail. For curing wounds they sew the wounded man in the skin of a bullock fresh stripped off the animal, leaving only his head out.—*Rich, Kurdistan*, i. p. 133.

BULBUL. PERS. A term employed among the various Mahomedan nations of Southern Asia, to designate birds belonging to several generic divisions of a natural family. The Persian bulbul is a species of true nightingale; it is the *Luscinia major* (or *Sylvia philomela* of Temminck), and is known as the Bulbul-i-bostan in India, where it is frequently imported as a cage-bird. In Persia it is often called the Bulbul-i-hazar dastan, the bulbul of a thousand notes; and its genus, *Luscinia*, is very closely allied to the small thrushes of America. The Persians delight to speak of this favourite song-bird, which Moore has made widely known:

'There's a bower of roses by Bendemeer's stream,
And the nightingale sings round it all the day long:
In the time of my childhood 'twas like a sweet dream
To sit in the roses and hear the birds' song.
That bower and its music I never forget;
But oft, when alone in the bloom of the year,
I think, Is the nightingale singing there yet?
Are the roses still bright by the calm Bendemeer?'

It is migratory there, making its appearance with the roses in April, and disappearing with the rose at the end of summer. According to Zakary bin Mahomed-al-Kaswini, the Persians say the bulbul has a passion for the rose, and laments and cries when he sees it pulled. The English nightingale, *Luscinia philomela* (*Philomela luscinia*), is migratory through Europe, N. Africa, and Asia Minor, but is not known in India or Persia. Indeed, there is no true nightingale, wild, in British India; but the shama, *Cercotrichas macrourus*, undoubtedly the finest song-bird of British India, is not unfrequently designated the

Indian nightingale. It is common to India and the Malay countries; and there is a second species (*C. luzoniensis*) in the Philippines, and a third (*C. erythropterus*) in Africa. The esteemed Indian songster is le merle tricolor de longue queue of Levaillant (*Oiseaux d'Afrique*, pl. 114). We may remark that the *Orocetes cinclophyncha* is also termed shama in the Madras Presidency. The bulbul of Southern India is not even a song-bird, the term being applied to the Bulbul-i-gul-dum, *Hæmatornis cafer*, which is a common cage-bird, and, like quails and cocks, trained to fight; and when pitted against an antagonist, it will sink from exhaustion rather than release its hold. The Husaini bulbul, also called the Shah bulbul, is of another sub-family, the Myagrinae, and is known also as the Paradise fly-catcher. It is of a chestnut colour for many months, but becomes white in the breeding season. It is a very graceful bird, with very long tail feathers, and it is a pretty sight to see it sitting from tree to tree. How the birds prevent the long tail feathers from becoming entangled in the thorny trees, is very curious. In Ceylon, the chestnut bird is called the fire thief, and the white bird the cotton thief. Its colouring is chaste, and its movements in flight graceful. Mr. Layard has often watched them, when seeking their insect prey, turn suddenly on their perch and whisk their long tails with a jerk over the bough, as if to protect the feathers from injury.

In the Madras Presidency, the three-coloured thrush, *Geocichla cyanotus*, is sometimes called a bulbul; and the hill bulbul of Matheran is the *Otocompsa jocosus*. It has crimson ear-tufts.

Dr. Jerdon arranges the Brachypodidae into four sub-families,—the Pycnonotinae or true bulbuls, the Phyllornithinae or green bulbuls, the Ireninae or blue-birds, and the Oriolinae or orioles. He names—

Hypsipetes psaroides, Vig. Himalayan black bulbul.
H. neigherriensis, Jerdon. Neilgherry black bulbul.
H. ganeesa, Sykes. Ghat black bulbul.
H. M'Clellandii, Horsf. Rufous-bellied bulbul.
Hemixos flava, Hodgson. Brown-eared bulbul.
Aleucurus striatus, Blyth. Striated green bulbul.
Criniger ictericus, Strickland. Yellow-browed bulbul.
C. flaveolus, Gould. White-throated bulbul.
Ixos luteolus, Less. White-browed bush bulbul.
I. xantholemus, Jerdon. Yellow-throated bush do.
Kelaartia penicillata, Blyth. Yellow-eared bulbul.
Rubigula gularis, Gould. Ruby-throated bulbul.
R. flaviventris, Tickell. Black-crested yellow bulbul.
Brachypodius poiocephalus, Jerdon. Grey-headed do.
Otocompsa leucogenys, Gray. White-cheeked crested bulbul.
O. leucotis, Gould. White-cheeked eared bulbul.
O. jocosus, Linn. Rod-whiskered bulbul.
Pycnonotus pygæus, Hodgson. Common Bengal do.
P. pygæus hamorhous, Gmelin. Common Madras do.
Phyllornis Jerdoni, Blyth. Common green bulbul.
P. malabaricus, Linn. Malabar green bulbul.
P. aurifrons, Temm. Gold-fronted bulbul.
P. hardwickii, Jard. and Selb. Blue-winged bulbul.
Iora zeylonica, Gmelin. Black-headed bulbul.
I. typhina, Linn. White-winged green bulbul.
I. scapularis of the Archipelago.
I. lafresnayii of Arakan.

—Jerdon, *Birds of India*; Layard's *Nat. Hist. of Ceylon*; Cal. Rev. See Birds.

BULBUL CHASM. PERS. Literally, bulbul eye. A pattern produced in weaving.

BULCHA, a pass in Kamaon, in lat. 30° 28' N. and long. 88° 14' E., over a high ridge, extending E. and W.

BULD. HIND. Horned cattle. *Buldea*, a cowherd.—Ell.

BUL-DAN. Amongst the ancient Hindus, the sacrifice of a bull to Balnath, the lord Bal, the sun. Balnath was the deity worshipped by the Saura races in Gujerat, and was identical with the Syrian Bal. That ancient sacrifice has long ceased. Four altars were erected for offering the flesh to the four gods, Lakshmi-Narayana, Uma-Maheswar, Brimha, and Ananta. The nine planets, and Prithu, or the earth, with her ten guardian deities, were worshipped. Five Vilwa, five Khudiru, five Pulashu, and five Udumburu posts had to be erected, and a bull was tied to each post. Clarified butter was burnt on the altar, and pieces of the flesh of the slaughtered animals placed thereon. Another description says that a covered altar had to be prepared. Sixteen posts had then to be erected of various woods; a golden image of a man, and an iron one of a goat, with golden images of Vishnu and Lakshmi, a silver one of Siva, with a golden bull, and a silver one of Garuda, the eagle, were placed upon the altar. Animals, as goats, sheep, etc., were tied to the posts; and to one post, made of the wood of the mimosa, was to be tied the human victim. Fire was to be kindled by means of a burning-glass. The sacrificing priest, hota, strewed the grass called d'hub, or immortal, round the sacred fire. Then followed the burnt sacrifice to the ten guardian deities of the earth,—to the nine planets and the Hindu triad, to each of whom clarified butter was poured on the sacred fire one thousand times. Another burnt-sacrifice, to the 64 inferior gods, followed, which was succeeded by the sacrifice and offering of all the other animals tied to the posts. The human sacrifice concluded, and the sacrificing priest offered pieces of the flesh of the victim to each god as he circumambulated the altar.

At the present day the bull is often devoted by Hindus to the gods, on the 11th day of mourning for a near relative. In this a marriage ceremony is performed, called brikhotsarg, or abandoning of a bull. Brik means a bull, and also the zodiacal sign Taurus. The brikhotsarg marriage ceremony is performed in the name of the bull, after which the animal is set free to roam; and in some Hindu towns of India these devoted cattle infest the streets and roads, and are very numerous and very troublesome. In several Mahratta towns they were often let loose. In Benares they are still in numbers; and whatever they may do or wherever they may lie down, they may be patted, spoken to, or even shouted at, but never struck. They are called Bijar, Saur, Brahmany bull. A similar marriage ceremony is performed with a well and orchard.—*Ward on the Religion of the Hindoos*, ii. p. 263; Elliot, 260. See Banotsarg; Bull; Jalotsarg.

BULDANA, a small walled town on a plateau in the Berar Assigned Territories. It is the chief town of a district of 2807 square miles, and a population of 404,042 souls, three-fourths Hindus, composed of several plateaux, with small fertile valleys intervening. Since 1818 it has been under Mahomedan rulers; but prior to that a Jaina dynasty seems to have held sway, and remains of their temples are to be seen at Deolghat, on the Penganga, at Mehkar, at Sindhked, Pimpelgaon, and at Lona. Besides the Mahomedans, in 1867—

Brahmans,	10,500	Dher,	38,928
Kunbis,	158,289	And,	7,444
Brinjara,	11,590	Gond,	309
Mali,	11,424	Koli,	2,607
Marwari,	2,819	Bhil,	416
Bania,	4,745	Lar,	1,777
Rajput,	3,468		

BULDEO, in Vrij, is a shrine of Buldeo, who is supposed to be the Hercules of the east and west, his club a ploughshare, and his covering a lion's skin. The complexion of Buldeo is depicted white, and that of Krishna black or azure. See Baldeva.

BUL-DHOON, the valley of Sookeymundi in the Kohistan of Jullundhur, but also called Kangra Bhawan, also Pallam Pattiar. Natives of the Bul-dhoon and Kulu have sallow complexions, and seem of the same race as the natives of Bushair. The men are tall and strong, but few of them are handsome. Many of the young women are pretty, but at the age of 20 or 25 they become coarse and stout. It was the practice for the women, gaily dressed, to assemble and greet a stranger with songs as he entered each village, for which honour he was expected to give a rupee to each knot. The men and women dress almost similarly.—*Masson's Journeys*.

BULESUR, a subdivision of the Gujar race.

BULGAR. HIND. *Boletus ignarius*.

BULGARIAN. The wild people who dwelt or wandered in the plains of Russia, Lithuania, and Poland, in the age of Justinian might be reduced under the two great families of the Bulgarian and Slavonian. Those of the former nation, who touched the Euxine Sea and the Mæotis, derived from the Huns their name or descent. The evidence of language attests the descent of the Bulgarian from the original stock of the Slavonian, or more properly Slavonian race; and the kindred bands of Servian, Bosnian, Rascian, Croatian, Wallachian, etc., followed the standard or example of the leading tribe. The first king of Bulgaria, in its present extent, was in A.D. 640, and their empire continued until 1017, when they were ruled by a lieutenant of the Greek empire.—*Chatfield's Hindustan*, p. 289.

BULGHAR, a town in Russia, where Russia leather is made; also Russia leather, corrupted into Bulkhal or Bhulkhal. In Persia, a kind of bottle, to hold nearly three quarts, is made of bulghar, to be used by horsemen travelling. It has a wooden stopper, and hangs from the saddle or girth, and swings under the horse. It is called matahras or matoras.—*Ouseley's Travels*, i. p. 247; *Fraser's Khorasan*, p. 69.

BULL. BENG., HIND. *Sterculia urens*, Roxb.

BULJA-WANLU. TEL. A Sudra race of Telingana. See Balja.

BULKOKRA. BENG. *Adelia castanicarpa*.

BULL.

Al-Taur; Saur,	ARAB.	Taurus,	LAT.
Taurau; Bulle,	FR.	Nandi; Bail,	HIND.
Stior,	GER.	Nar-gao,	PERH.
Shur,	HEB.	Mar,	TAM.
Foro,	IT., SP.	Eddu; Basava,	TEL.

The bull has always held a prominent place in the religious systems of Asia. The sacred bull of the Assyrians, the Apis of the Egyptians, and the bull Nandi of the Hindus, are evidently identical types. The golden calf of the Israelites will not be forgotten. And for the use of the figure of the bull as a sacred ornament by the Jews, the

brazen sea in the temple of Solomon may be cited (1 Kings vii. 25; 2 Chron. iv. 4, 5; and Jeremiah lii. 20). In Assyria, Baal, or the supreme deity, was worshipped under the form of a bull or heifer, as may be inferred from Tobit i. 5: 'Now all the tribes which together revolted, and the house of my father Nephthali, sacrificed unto the heifer Baal;' but the reading is doubtful.

In the English Scriptures, the word 'bull' is the translation of several Hebrew words; shor, a cow, theo, a wild bull; abbire, tor. A calf was in Hebrew ogel, in Arabic, ajel. Jeremiah xxxiv. 18 and 19 tells of a sacrificial rite of splitting a calf in two, and men passing between the parts; and bull-worship is noted in 1 Kings xii. 28, 29, 30, the images being of gold. In ancient Western Asia, Bal and the brazen calf were specially worshipped on the fifteenth of the month (see 1 Kings xii. 32); and at present, in India, the sacred day of Bal-Eswar, with his Vahan bull Nandi, is the amavasa, the moonless fifteenth day of the month. The bull was offered to Mithras by the Persians; and, opposed as it now appears to Hindu faith, he formerly bled on the altars of the sun-god, on which not only the Buldan offering of the bull was made, but human sacrifices.—*Layard, Nineveh*, ii. pp. 474-5. See Bul-dan.

Apis, the sacred bull of Egypt, was chosen by the priests of Memphis for its black and white spots; and Mnevis, the sacred bull of Heliopolis, had nearly the same marks; but the Hebrews, in preparing their water of purification, were ordered (in Numbers xix. 2) to kill a red heifer without a spot. Amongst the Egyptians, the solemnities at the burial of Apis were entirely Bacchic. The priests did not wear the nebris or deer skin, but they wore the panther skin, and carried thyrsus staves. The brazen calf mentioned in Scripture as an object of worship by the Hebrews, is still worshipped by Hindus in India, frequently of brass, but oftener of stone. Some of the Hindu images of the bull are of colossal size. One, supposed to be the largest in the south of India, is to be seen at the Charmandi hill in Mysore. It is carved out of a solid rock at the side of the hill, and is approached by ascending 660 stone steps. There is also a magnificent temple of Siva at Tanjore, with a great bull in front. Siva, under the name of Mahadeva or Eswara, is the tutelary divinity of the Rajputs in Mewar; and, from the early annals of the dynasty, he appears to have been, with his consort Isani, the sole object of the Gehlot Rajput's adoration. Eswara is there adored under the epithet of Eklinga, and is either worshipped in his monolithic symbol, or as Eswara Chao-mukhi, the quadriform divinity, represented by a bust with four faces. The sacred bull Nandi has his altar attached to all the shrines of Eswara in India, as was that of Mneves or Apis to those of the Egyptian Osiris. Nandi has occasionally his separate shrines, and there is one in the valley of Udaipur which has the reputation of being oracular as regards the seasons. The bull was the steed of Eswara, and carried him in battle; he is often represented upon it, with his consort Isa, at full speed. In Ceylon, to every herd of cattle there is a sacred bull, who is supposed to exert an influence over the prosperity of the flocks; his horns are ornamented with tufts of feathers, and

frequently with small bells, and he invariably leads the great herd to pasture. On starting in the early morning from the cattle kraal, the natives address the bull, telling him 'to watch over the herd; to keep the cows from straying, and to lead them to the sweetest pastures, so that they shall give abundance of milk,' etc.—*Bunsen*, i. p. 432; *Tod's Rajasthan*, i. pp. 222, 514; *Tennent's Ceylon*; *Vossius de Idololatria*; *Bryant, Analysis*; *Hancarville, Recherches sur les Arts de la Grèce*; *Ouseley's Travels*, i. 280; *Ward's View*, ii. 143. See Bul-dan.

BULLA. DUK. *Terminalia bellerica*. **SANSK.**, *Pavonia odorata*.

BULLA. the polo game of the Dard.

BULLAIN-LENA. **HIND.** A ceremony amongst Mahomedan and Hindu women in India, in which the woman sweeps her hands down from the head to the feet, and then raises them to her own head, supposed to take the other's evils on herself.

BULLAR, HIND., *Lablab vulgare*, *L. cultratum*.

BULI-FROG of Malabar, *Rana Malabarica*.

BULLY TREE. *Achras sapota*.

BULOOSITOUN ROOMANI, *Buloositoon Yunnan*; *Punica granatum*.

BULPAM. **TAM.** *Bulpamu*, **TEL.** Soapstone.

BULRUSHES, *Typhaceæ*.

Jonc,	FR.	Pun,	SIND.
Goma,	HEB.	Booree; Putera, riri,	
Giunco,	IT.	Junco,	SP.

Bulrushes, so conspicuous in the marshes of Europe, extend to similar situations in most parts of India. The leaves are in some parts of Europe employed in making mats and winter coverings for plants, as well as for stuffing chairs, putting between the staves of barrels. The leaves of *putera* and *riri* (*Typha elephantina* and *T. angustifolia*) are employed in making mats in North-West India. In Sind the former is called *pun*, and its leaves employed for making mats and baskets. The pollen, like that of *Lycopodium*, is inflammable, and used as a substitute for it as in Europe. It is also collected in Sind, and there called *booree*. Elephants are fond of *T. elephantina*. It is a valuable sand-binding plant, and it is tied into bundles as a swimming float.—*Royle, Fib. Pl.* p. 35.

BULSUN. A Native State, originally a feudatory of Sirmoor, but a separate *sunnud* was granted to it in September 1815. Its tribute payment is Rs. 1080. Its chief is of Rajput origin. Thakur Jograj was created a rana in 1858, for services rendered during the mutiny. The revenue of the state is Rs. 6000, and the population 4892.

BULTI extends from the confines of Ladakh westward to the great bend of the Indus. It has Dras and Hasora on its south, and the Kouen Lun or Mustagh on the north. The bed of the Indus at Tolti is 7500 feet; at Iskardo, the capital, 7000; at Rondu, 6200; and at the great bend, about 5000.—*H. f. et T.* 224, 225.

BUL TUL, or *Shur-ji-la*, a pass leading to Kashmir, in lat. 34° 10' N., long. 70° 15' E. The crest is 10,500 feet.

BULUH. **MALAY.** A bamboo. *Buluh perindu*, the plaintive bamboo, also called *Buluh-ribat*, the storm-bamboo. In the forests of the Malay Peninsula, Sumatra, and Java, the natives make holes in the forest bamboos, and plaintive sounds issue

when the wind blows. It is a sort of *Æolian* pipe. See Bamboo.

BULUN. **SINDI.** The water hog, a porpoise? in the rivers Indus, Ganges, Irawadi.

BULUNG. **JAV.** *Plocaria candida*, *Nees*; *Eucheuma spinosa*; Agar-agar; *Gracillaria tenax*.

BULUT TAGH is that part of the Kouen Lun chain which is east of Samarcand and south of Khokand. Bulut Tagh means the cloud mountain; but the Kouen Lun chain is also called the Belur Tagh, which, according to Cunningham, is synonymous with the Balti mountain. Other names for the chain are Mustagh, Karakoram, Hindu Kush, and Tsung lung or Onion mountains, from the prevalence on it of a species of *Allium*. Its continuation forms the Pamir range west of Yarkand. The Kouen Lun chain is not less elevated than the Himalaya, and is covered throughout a great part of its length with perpetual snow. Its axis has not been crossed by any traveller, but has been reached by Dr. Thomson, who visited the Karakoram pass, elevated 18,300 feet. In Western Tibet, the axis of the chain is in general distant about 150 miles from the Himalaya, and the country between the two consists of a complication of ranges of lofty and rugged mountains, separated from one another by stony valleys, which at the higher parts of the courses of the rivers expand at intervals into alluvial plains.—*H. f. et Th.*

BUMAY-ZA. **BURM.** *Albizia stipulata*.

BUMBA, a race inhabiting the hills westward from Kashmir to the Indus.

BUM BUKLESIR. See Hot Springs.

BUMBUL. **HIND.** *Rubus biflorus*.

BUMEE. **SINGH.** *Tetranthera Roxburghii*.

BUMMALO, a small fish, salted and dried; also called Bombay duck, but found on all the coasts of Southern Asia. See Bombay Duck.

BUMTELE, name of a Rajput tribe on the eastern parts of the Central Doab.—*Ell.*

BUN or *Boon*. **ARAB.** Coffee, coffee berries.

BUNA of Kaghlan. *Albizia odoratissima*.

BUNA. **HIND.** *Edwardsia mollis*, *Platanus orientalis*.

BUNAFUR, a tribe of Yadubansi Rajputs in Oudh, Allahabad, Benares, Gurra Mundia, and Bundelkhand.—*Ell.*

BUNBHOAY. **BURM.** *Careya arborea*.

BUNCHONG BULU, a red-dye-wood of the Celebes.

BUNCOGA. **SINGH.** *Urostigma Mysorense*, *Miq.*

BUND. **HIND., PERS.** (*Bünd.*) A slip of an account. *Band-behri*, also *Band-phantah*, a statement of a village account; an embankment, a dam.—*Ell.*

BUND, Boond. **HIND.** A dark blue silk with many spots, largely made at Benares. *Bund mumi*, a kind of stiff waxed spotted silk.

BUNDA. **HIND.** A sort of earring (*pundela*); a ring used by ear-borers.

BUNDAHISH, or Original Creation, a sacred book of the Parsees; it is in the Pehlavi. It gives the Parsee cosmogony; and one version was written about A.D. 880.

BUNDALA, or *Boondala*, an agricultural race in the Maiker district.

BUNDARE, a Kandh village in the Madras district of Vizagapatam. Until 1849, three human beings were here annually sacrificed, two to the

sun in the east and west of the village, and one in the centre. The head was left attached to the sacrificial post till devoured by birds.—*Imp. Gaz.*

BUNDELA, a tribe who claim to be Rajputs. They give a name to the province of Bundelkhand (corruptly Bundelcund). They are descended from the Garhwars of Kautit and Khairagarh, and first settled in Bundelkhand in the 13th or 14th century. There are few genuine Bundelas in the British portion of the province, except in the pargana of Panwari. The province of Bundelkhand is a mountainous hilly tract of country lying between lat. 23° 52' to 26° 26' N., and long. 77° 53' to 81° 39' E., between the rivers Jumna and the Chambal on the N. and N.W., the Jubbulpur and Saugor divisions on the south, and Rewa and Baghelcund and the Mirzapur hills on the S. and E. Within these bounds are five British districts; it encloses the three Treaty States of Orcha or Tehri, Datia, and Saunthar, and the states of 26 chiefs who have suzerainty or Ikarnamah from the British Government. Iron and copper are obtained, and diamonds from Panna. It seems to have been occupied successively by Gonds and Rajputs; and to the latter are due the forts of Ajaygarh and Kalinjar, the temples at Khajuraka and Mahoba, and the Hamirpur irrigation works. A vast portion of Bundelkhand is hilly and unproductive, forming the northern slope of the table-land of the Vindhya. Bundelkhand has, in the past three centuries, been fifteen times desolated by famine. The Bundela became dominant in the 14th century. Towards the middle of the 18th century, the aid of the Mahrattas was called in against the Delhi forces. On the fall of the Peshwa in 1818, all his sovereign rights were ceded to the British. Under the Bundelkhand Agency are Sohawal, Jignee, Ajaygarh, Baonee, Beronda, Bijawar, Chirkary, Chutterpore, Duttia, Kotee, Myhere, Nagode, Orcha, Punna, Rewa, and Sumpthur. Of the principal states, Gwalior, Indore, Bhopal, Dhar, Dewas, Bhopal, and Jowra are under Mahomedan rulers, and the rest Mahratta. The petty states hold under the immediate guarantee of the British Government, but have feudal relations with one or other of the larger states, and occasionally with more than one.—*Imp. Gaz.*; *Treaties, etc.*, iv. p. 195.

BUNDER or **Bandar**. **PERS.** A seaport, a harbour; prefixed to many seaports along the coasts of the Arabian Sea. Shah-Bunder is a harbourmaster, a governor; the British sailors' market boat is the Bunder boat.

BUNDER ABBAS, formerly called Gambroon, in lat. 27° 10' N., at the entrance of the Persian Gulf, is 5 miles north of Kishm island. It is in the south of the province of Kirman, and is about eighteen days' march from the town of Kirman.—*Horsburgh*.

BUNDESH, a religious book of the Parsee Zoroastrians. See *Bandahish*.

BUNDI, a tributary state in Rajputana, lying between lat. 24° 58' and 25° 55' N., and long. 75° 23' and 76° 30' E. Population in 1875 was 224,000, paying a tribute of one lakh of rupees. The ruling family belong to the Hara tribe of Rajputs. Omeda Raja gave most efficient assistance to Colonel Monson's army in its retreat before Holkar; he died in 1804, after a rule of upwards of fifty years, and was succeeded by his infant

son, Bishen Singh. During the Mahratta supremacy, this state suffered much at the hands of Sindia and Holkar, who virtually assumed the management of the revenues. The territory of Bundi was so situated as to be of great importance during the war in 1817 in cutting off the flight of the Pindari. Maba Rao Bishen Singh early accepted the British alliance, and a treaty was concluded with him on 10th February 1818. By this, the tribute paid to Holkar and the lands in Bundi held by Holkar were relinquished to the raja, who engaged to pay to the British Government the share of tribute he had hitherto paid to Sindia. In its earlier fortunes, this state became so connected with the imperial court of Delhi, that, like Jeypore, the princes adopted several court customs. The Puthan, or premier, was entitled Diwan and Moosahib; and he had the entire management of the territory and finances. The Foujdar or Killadar is the governor of the castle, the Maire de Palais, who at Bundi is never a Rajput, but some Dha-bhae or foster-brother identified with the family, who likewise heads the feudal quotas or the mercenaries, and has lands assigned for their support. The Bakhshi controls generally all accounts; the Rassala those of the household expenditure. Bundi has a beautiful palace. During the mutiny and rebellion of 1857, the raja was less forward. Its military force is 700 horse, 1575 infantry, and 88 guns.—*Tod's Rajasthan*, ii. p. 504; *Treaties, Engagements, and Summits*, iv. p. 63.

BUNDI. HIND. A kind of sweetmeat, in grains or drops. *Bünd*, a drop.

BUND-i-Kaisar, a dyke or bund near the town of Shuster in Southern Persia, thrown across the river Karen. Sir Henry Rawlinson says that it was constructed by Ardeshir Babekan or his son Shahpur; and the canal constructed is called Nahr-i-Dariyan, which waters the fields to the south in the Miandab.—*De Bude*.

BUNDU MALLI. TEL. *Jasminum sambac, Ait.*

BUNER, a democratic State between Afghanistan and India, N.W. from Peshawur, beyond the Judoon country on the north-west. It is a rugged country, extending from the lower range of the Hindu Kush downwards to hills which command the Chumla valley and the central plain of Yusuf-zai. On its western frontier, again, lies the Swat territory. The Buner people could muster a force of some thousands. They have generally abstained from molesting British subjects. Near them are the Swat, Ranizai, and Lower Osman Khel tribes, the two latter being subordinate to the former.

BUNGA. PUKHTO. Ransom.

BUNGA, a temple of the Akaliseset of the Sikhs.

BUNGA-BUA-PALA. MALAY. Also Bunga pala, mace. Bunga Chanki, also Bunga-lawang, cloves; Caryophyllus aromaticus. Bunga pukul ampat, Mirabilis jalapa. Bunga chappa, Blumea balsamifera.

BUNGARI. HIND. *Vangueria spinosa.*

BUNGAROO. TEL. Gold.

BUNGARUS CÆRULEUS, *B. tropidonotus*, *B. Ceylonicus*, are three poisonous serpents of Burma and Ceylon, of the family Elapidae. *B. cæruleus* occurs in most parts of India and in Burma; *B. fasciatus*, common in Burma, is rare on the eastern coast of the Peninsula; *B. semifasciata* occurs in China. These snakes are from 4 to 6 feet long.

BUNGA SURSON. HIND. *Sinapis juncea*.

BUN-GHI. HIND. *Corchorus olitorius*.

BUNGKA, HIND., also called Kutooa, an aquatic beetle which eats rice plants. It is said to make a leaf boat, which it paddles from plant to plant.—*Ell.*

BUNGLA. HIND. Bungalow, a one-storeyed house.

BUNG-MAI-ZA. BURM. *Inga bijemina*, Willd.

BUNGOMA, ? *Emyda granosa*.

BUNGRAH. HIND. *Acorus calamus aromaticus*.

BUNGREE. HIND. Glass bracelets.

BUNG-TA-LAL. CHIN.

Tung-ta-hai, . . .	CHIN.	Yang-kwo, . . .	CHIN.
Ta-hai-tsz, . . .		Boa-tam pai jam, . . .	"
Pung-ta-rai, . . .	"		

A tree of Siam; its fruit makes good jelly.—*Smith*, p. 44.

BUNGUSH, a Pathan tribe who inhabit the enclosed plain of Meranzai, and also the Kuram valley within the Afghan limits. In the Kohat district, the principal tribe are the Bungush. They can muster 15,000 fighting men, and are fairly good soldiers. In 1851 they petitioned the British to include them in Kohat. This request was acceded to. They offered to guard the Kothul; and while arrangements were progressing, the Gullee Afridi suddenly attacked the Bungush people on the Kothul, and seized that post. Several Bungush chiefs were killed in the encounter, and Major Coke, who was present, was slightly wounded. Upon this check, the Bungush people obtained the alliance of two small though warlike tribes, named Buzoti and Sipah. These were independent, and dwelt in the hills near the pass.

BUNI. HIND. A muslin made at Dacca.

BUNLI, the Thug designation of a victim.

BUNJ. ARAB. *Hyosciamus sniger*.

BUNJAR or Banjar. HIND. Waste land, land lying fallow; also indifferent soil.

BUNJIN. HIND. A weed which grows in the kharif crops; much sought after by fakirs who practise alchemy.—*Elliot*. Qu. ban jan, Wild Man.

BUNKITA BARRING, obtained from an undescribed plant in Borneo, produces a dark purple or black dye.

BUNNAS, a river which rises in a cluster of summits in the Aravalli range, lat. 24° 47' N., long. 73° 28' E., south-west into Runn of Cutch by several small channels. Length, 180 miles. About 17,000 square miles drained.

BUNNI. HIND. Payment in kind; hence Bunnihar, a ploughman paid in kind.

BUNNI, a timber of Jullundur; resembles the 'Ban,' except that it is smaller, and the wood is of a white colour, but it is applied to the same purposes as the 'Ban.'—*Comr. Jullr.*

BUNNU, a district in the Derajat division of the Panjab, situated S.W. of the Kala or Salt Range, with its centre in lat. 22° 40' N., and long. 70° 30' E. Its population, 288,000. The Bunn valley is south of and is accessible by the Sürduk and the Koonh-i-gao passes. The lands are chiefly rich and fertile, intersected by the Kuram, and irrigated by water-cuts. The only uncultivated portion is the 'thul,' or pasturage ground at the base of the hills. During the winter months the Waziri pasture their flocks and herds, and erect patriarchal huts of skins with wooden framework. In the summer months they retire to the cool

mountain heights, taking their cattle and dwellings with them. The Bunnuchi are mixed races, who dwell in walled villages. They are undersized and sallow-skinned. They are quiet, orderly, and regular in revenue matters, but immoral, capable of reckless perjury and deliberate assassination. They cultivate with some industry. Iron is imported in quantities from the Waziri hills, and is worked up at Kalabagh into agricultural implements, caldrons, cooking utensils, grates and fire-irons, ladles, pegs, locks, horse-shoes and chains. The Waziri bring it down on bullocks and mules chiefly through the Kurum pass to the Bunn valley, where it is bought up by carriers from Kalabagh. The spade in use in Bunn, called in Pushtu 'erm,' is very peculiar. Tobacco is imported in large quantities from the Waziri hills. Much cattle is brought to the Bunn fair from Dour and the Waziri hills; also numbers of goats and sheep. The Doomba is much prized, and is reared in the district as well as beyond the border.—*Records of the Govt. of India*, No. 11.

BUNNUR, an Afghan tribe adjoining the Peshawur district.

BUN-OTSURG. HIND. Also written Ban-otsarg, from Ban, a forest, Ootsarg, abandoning. A Hindu marriage ceremony performed in honour of a newly planted orchard, without which it is not proper to partake of its fruit. A man holding a Saligramma personates the bridegroom. Another, holding the sacred tulsi, personates the bride. After a homa or fire sacrifice, the officiating Brahman puts the usual questions to the couple. The bride then makes three circuits of a spot in the orchard, moving from the south to the west, followed by the bridegroom holding an end of the personating bride's garment. The bridegroom then takes precedence, and circumambulates similarly.—*Elliot*.

BUNSEN, KARL CHRISTIAN, born 1791, at Corbach in Waldeck. He was the son of a soldier; was long employed in Italy and England as ambassador; and was the author of *Egypt's Place in Universal History*; *Description of Rome*; *Hippolytus and his Times*; *Signs of the Times*; *Church of the Future*; *God in History*.—*Fraser's Magazine*, June 1868.

BUNT are the chief people in Canara.—*C.* 134.

BUNT. HIND. Smut balls, or pepper brand. The fungus which occasions this disease, *Uredo caries*, *Dec.*, *U. foetida*, *Bauer*, has hitherto been met with only in the grains of wheat, when its presence is readily recognised by the peculiarly disgusting odour of the infected ear. When this disease prevails, it greatly deteriorates the value of the sample, and, from imparting its disgusting odour to the flour, makes it less fit for bread.—*Russell*.

BUNT. HIND. Unripe pulse of *Cicer arietinum*.

BUNTA-JAMUDU. TEL. The *Euphorbia anti-quorum*.

BUNTAKI. HIND. *Solanum melongena*.

BUNTING. Several species of these birds occur in India. The grey-capped bunting is *Emberiza caniceps*. The black-throated bunting is *E. cioides*. The grey-capped bunting is *E. Stewarti*.

BUNTURIA, a class of wood-rangers in the northern parts of Gorakhpur. They are now cultivators.—*Ell.*

BUNUCH. BENG. *Morinda exserta*, *Roch.*

BUNUGA-GASS. SINGH. *Urostigma myso-rense*, *Mig.*

BUNUN. HIND. *Fragaria vesca*.

BUNYA-BUNYA, a tree, *Araucaria Bidwelli*, of Australia, with cones as large as a child's head. It grows from 100 to 150 feet high, with a remarkably stout trunk, which scarcely tapers for one-half of its height from the base. The unripe seed is greedily eaten raw by the natives at all times, and when ripe, roasted and pounded into cakes. Each tribe of aborigines has its own group of trees; and of these each family has a certain number allotted, which pass from generation to generation, and is the only hereditary property which any of the aborigines are known to possess.—*Mr. Bidwell*; *Dr. Bennett, Australasia*.

BUN-ZU. See Bom-zu.

BUPELURUM MARGINATUM. Wall.

Kali Zewari, . . . HIND. | Zira, Sipal, . . . HIND.

This and allied species are abundant in many parts of the Panjab Himalaya from 2500 to 11,500 feet. In Kanawar the root is stated to be eaten raw, and the seeds to be exported as Zira.—*J. L. Stewart, M.D.* See Carum.

BUPELURUM OCTORADIATUM. Smith.

Taz-hu, CHIN. | Te-ai-hu, CHIN.

This plant is said to grow in Yen-ngan-fu and in Shen-si, its root is employed in thoracic and abdominal inflammations.—*Smith*, p. 45.

BUPRESTIS, a genus of beetles with bright wing-covers, largely used in the arts. See Beetles; Coleoptera; Insecta.

BUQ. PERS. A goat's horn. Buq-i-Hamam, the horn summoning to the bath.

BUQR-EED, or Eed oos Zoha, held on the 9th day of the twelfth month Baq-reed. On this occasion, Mahomedans of India proceed to the Eed-gah in great state, when the khoobah is read in the name of the ruling sovereign.

BUR, also Buri or Boratu. SIND. The pollen of the *Typha elephantina*, *Rozh.*, made up with water into cakes, and much eaten. It is inflammable like that of *Lycopodium*, and is used as a substitute for it in Sind.—*Royle*, p. 35.

BUR, a wandering tribe in the N.W. Provinces.

BUR. HIND. *Tamarix orientalis*, *Oreosersia lanuginosa*, *Cymbopogon iwarancusa*.

BURA, Buri, Burha, Budha. HIND. Old. Many towns, rivers, etc., are so designated.

BURA. HIND. Chopped straw.

BURA-AL. HIND. *Morinda citrifolia*.

BURA-BUHOORI. BENG. *Cordia latifolia*.

BURABUR hills are isolated rocks of sienitic granite rising abruptly from the plain about 15 miles north of the city of Gaya, by the left bank of the Phulgo or Mahanadi. The highest is called Burabur, also Sidheswar, from a temple to Mahadeva that once crowned its heights. The next in height is the Kowa Dol, which is near a mile to the south-west. A third is called Nagar-juni, and is the easternmost of the great cluster. A fourth, and the smallest, called Durhawut, is at the northern extremity; others also have names, but the above alone contain objects of notice. The Kowa Dol is an almost entirely bare rock, having nearly a perpendicular scarp on its northern face, and sloping at an angle of 45° more or less on the opposite or southern side; east and west, it is disjointed and inaccessible; huge stratified masses are piled one over the other, decreasing in length at each end. The whole is surmounted by single blocks like pillars, the

centre one of which towers above the rest, and is conical. It is said that formerly there was a huge block balanced on the top of this cone, which, from its being moved by birds alighting on it, obtained the name of Kowa Dol, or crow-moved, or the crow swing; about the eighteenth century, this rocking stone fell down to where it may still be seen. The caves of Burabur are seven in number,—four in one hill, three in another; but the name Satgarba, commonly understood to mean seven chambers, is applied to two only.

In the hollow or recess on the east side are the remains of a once splendid Buddhist temple, of which many pillars are still standing; also a gigantic figure of Buddha seated. The Sinbasun or throne is very handsome: there are the usual supporters, the Sinha or lions rampant, trampling on elephants couchant, and ridden by amazons armed with shields and swords. 60 or 80 figures are rudely cut in the huge detached masses of rock at the foot of the hill. There is one block hewn into the shape of a small temple, with niches and images on the four sides. First niche, from proper right, male figure erect with a spear; 2d, female figure, Padmavati or Maya devi; 3d, Buddha seated; 4th, Mahadeva and Parvati, commonly called Gouri Sunkur, Parvati seated on Mahadeva's knee, with the bull Nandi at his feet, and the Sinha or lion at hers; 5th, male figure erect with four arms; 6th, male figure carried on the shoulders of another; 7th, the Lingam and Yoni; 8th, male half figure, Aruna? 9th, Mahadeva and Parvati repeated; 10th, male figure erect holding a lotus in each hand, probably Surya; 11th, Ganesha; 12th, female figure with four arms, attended by Nandi and Sinha; 13th, male figure standing on a prostrate figure. After these, nine niches have what appears to be Durga slaying Mahesh-Asur with her trident; she has one foot on the buffalo's neck, and holds it by the hind leg. This subject is repeated on many detached rocks. The Linga is of as frequent occurrence. There is one very large four-faced Linga, called the Choumurti Mahadeva, such as may be seen in the caves of Ellora; it is of common occurrence in this district. The inscriptions are in Pali, in the old Pali character.—*Capt. Kittoe, Beng. As. Soc. Jo., clxxviii., 1847.*

BURA-CHOOHI. HIND. *Villarsia Indica*.

BURAD. HIND. Filings, raspings, chips.

BURAGA. TEL. The gum and wood obtained from *Bombax Malabaricum*.

BURA-JANWAR. HIND. The hog; literally, bad beast.

BURAK and Sarmu rivers run in valleys of the Assam chain. The Naga, Mikir, Cachari, Garo, and Kassya are the five races in whose possession chiefly are the broad highlands of that chain, extending from the N.E. near the head of the Kynduayn and Namrup, on one side along the valley of the Brahmaputra to its southern bend round the western extremity of the chain, and on the other side south-westerly along the valley of the Burak and Surmu.

BURAQ, steed on which Mahomed rode to the seven heavens. The angel Gabriel seated him on it.

BURAT. HIND. Assignment. ARAB, the night of record, a Mahomedan ritual.

BURATY or Pulati, a Mongol nomade tribe near the Baikal lake.

BURAYA. HIND. *Rucervus duvaucelli*.

BURBUTI. BENG. *Dolichos Sinensis*.

BURCKHARDT, JOHAN LUDWIG, a native of Denmark, who travelled in Egypt and Arabia, author of *Notes on the Bedouins*, 1831, and *Wahabism*; also of *Travels in Arabia*, 1829, and *Travels in Syria*, 1822. He visited Mecca A.D. 1814, under the name Shaikh Ibrahim. He is buried near Cairo, in the large cemetery outside the Bab-un-Nasr.—*Playfair*; *Burton's Pilgrimage to Mecca*, i. p. 168.

BURDA is one of the five northern districts of Kattyawar. Burda hills end in the south in the Alich range and in the Oshum.

BURDEH. ARAB. A thick striped woollen stuff, in use by the Arabs as a cloak or blanket. Akhda-burdeh is a grey or brown, and Ahmar-burdeh a red one. That of Mahomed was 7½ feet long and 4½ feet broad.

BUR DEWALI, a lofty tower in Jaganath, about 180 feet in height and about 28 feet square inside, in which the idol and his brother and sister Subahdra are lodged. See Jaganath.

BURDI, a wild Baluch tribe on the western banks of the Indus, near Shikarpur.

BURDU GUMADU. TEL. *Cucurbita hispida*.

BURDUR. —? a tree of Cuttack, an excellent wood for carriage poles, shafts, and wheels, and in all coachbuilders' work; sp. gr. 1·00.—*Cal. Cat. Ex.* 1862.

BURENDA, also written Borenda, properly Bruang, a pass in the Himalaya, in lat. 31° 23' N., long. 79° 12' E.; the length of the crest is 50 paces, and the crest is 15,171 feet above the level of the sea. The most elevated part is a narrow glen, very steep. The pass leads from Kunawar through the outer Himalaya, and is the easiest and most frequented in the neighbourhood. It is open for seven or eight months; during the rainy season almost all the snow dissolves.

BURGEE, a Hindu race in Woon.

BURGH. HIND. *Phytolacca decandra*.

BURGHIER, in Ceylon, is applicable only to white persons of pure Dutch descent, of whom there are now but very few in Ceylon; but the name has, by courtesy, been given to all those who in India are styled Indo-Britons, Eurasians, East Indians, Anglo-Indians, or more commonly 'half castes,' namely, the descendants of Europeans by native women. In the Moluccas, also, the term is applied to the Christian descendants of the Dutch. The Amboyna burghers, who usually crowd the jetty spending their time in angling for small fish, will refuse to carry even a light burden; but this kind of manual labour is the peculiar province of slaves, and the Vrij Burghers, poor enough as they usually are, but priding themselves in professing the same religion with the Europeans, will not lower themselves by performing a description of labour which even Chinese and free Mahomedans would disdain.

BURGHIER, a name given by Europeans to the Badaga or Marves race on the Neilgherry Hills.

BURGUNDY PITCH is a product probably of the *Abies excelsa*; it is of light yellow colour, often adulterated with dammer or ganda baroza.

BURHA or Budha. HIND. Lit. an old man; in the Kamaon Himalaya, the superintendent or headman of a village, or of a set of villages. The term is equivalent to Kumin, Syana, and Thokdar, and is chiefly used in the eastern parganas of Kamaon. The tenure connected with it is called Burha Chari and Kumin Chari.

BURHA GANGA, an old bed of the Ganges, traceable below Hastinapur, and Soron and Kampil.

BURHAL. HIND. A light yellowish-coloured wood, not strong; plentiful in the Santal jungles. Used for doors, venetians, furniture, etc., by the natives.—*Cal. Engineer's Journal*, 1860.

BURHANPUR, town in lat. 21° 18' N., and long. 76° 16' 26" E., is on the N. bank of the river Tapti, and distant 41 miles S. by W. from Khandwa, the headquarters of Nimar. Population in 1877 was 29,303. It was founded about A.D. 1400 by Nasir Khan, the first independent prince of the Faruki dynasty of Kandesh, and called by him after the famous Shaikh, Burhan-ud-Din of Dowlatabad. It was held by eleven princes of this dynasty for two hundred years, till A.D. 1600, when the kingdom of the Faruki was annexed by the emperor Akbar. In 1614, Sir Thomas Roe, ambassador from James I. of England to the Great Moghul, describes his visit here to Prince Parviz, son of Jahangir. Tavernier passed through Burhanpur (or, as he wrote it, Brampour) in 1641, and again in 1658. It was plundered in A.D. 1685, by the Marhattas. It was taken by General Wellesley on the 13th October 1803.

BURHAPATRA, a pargana in the Gonda district in Oudh, area 77½ square miles or 49,688 acres, and population in 1865 was 20,451. The Ahir and Chamar are the most numerous castes. The aboriginal Bhar here are following a kind of Kumari cultivation, wandering from jungle to jungle.

BURHA PENN, a deity of the Kandh race.

BURHEL, *Ovis nahuia*. See Bovidæ.

BURHOLIA, HIND., a branch of the Bhrihubansi Rajputs settled at Burhoul, near Benares.—*J.H.*

BURI or Buli, a Philippine palm; probably *Corypha gebanga*, the gabang of the Malays and Javanese. The Philippine islanders from the leaves make mats, from the sap both sugar and a distilled spirit, from the pith a sago, from the seeds rosaries, and the spines, boiled in water, yield a thread from which a coarse cloth is woven, called sagoron.—*Crawford, Dic.* p. 77.

BURI. HIND. *Vitis Indica*; *Symplocos spicata*.

BURIAL CUSTOMS. In the south and east of Asia, the modes of disposing of their dead are almost as varied as are the races themselves. It has been remarked that the mode of disposing of the dead has from the earliest times been symbolical of the opinions as to the worth of the deceased while he was amongst them, or indicative of their views as to the future condition of the departed. In general there has been little display over the remains of women; but whether with men or women, the prevailing habit has been to convey the remains to some quiet resting-place with a decorous solemnity, and there erect some lasting memorial over them. With some races, however, even to the present day, the departure of a friend or relative is regarded joyfully, and the procession to the place of final disposal is mirthful; while other races even cast out their dead, and allow the remains to be treated with indignity. But the anxiety of the generality of nations has been to perpetuate the memory of the departed; and everywhere are to be seen sepulchral monuments raised with that object. Many of these exist from prehistoric times, and often form the sole remaining history of the races who erected them. At the present day, monuments erected

with brick or stone, and in the form of pillars or upright or horizontal slabs of stone, or cupolas, or domes, or sarcophagi, beneath which the remains are laid, are usual modes of marking the deceased's resting-place. But in more primitive times, the cairn or heap of stones, the monolith, the cromlech, the circle, the heaped-up barrow of the Celtic tribes, the tumulus, as the Romans called it, were usually resorted to, and many of these are to be seen in the south and east of Asia.

The *cairn* was formed of stones gathered from the vicinity, and set round about the resting-place of the dead and piled over them; and this is all that is given to the Mahomedan pilgrim who falls in the desert. The *monolith* or single stone was usually placed perpendicularly near the spot. The *cromlech*, consisting of two, three, or more upright stones, with a flat stone placed over them, formed a sepulchral chamber, and was the earliest approach to the cupola or dome. The *circle*, or enclosure of upright stones set singly at varying spaces apart, are found surrounding the cromlech or cairn. The *barrow*, or tumulus, often raised to a considerable height, and covering a large area, is the most noble, and has been the most enduring; and with these the bodies of the departed were not interred in graves sunk below the surface, but were placed on the surface of the ground, and then the earth was heaped up. The barrows, many of which have been opened, are found sometimes to contain skeletons, in other cases urns only, while occasionally both urns and skeletons, or urns and ashes, appear together. The urns are often found to contain burnt bones and relics; but in the earliest barrows are war weapons, such as stone hatchets and hammers, celts of the same material, both arrow-heads and spear-heads of flint, with beads of various substances, and torques or collars and armlets of gold or bronze. Somewhat later, the celts and weapons are of bronze, and the sword is found to have been broken, indicative that the warrior's race had been run. The ornaments remain the same, and coins are found.

The methods adopted for the disposal of the dead from the most ancient times have been interment, burning, embalming, launching into rivers, and exposure. Of all these the first seems to have been the most general and primitive. Cremation is undoubtedly very ancient, for king Saul was burnt, and his bones afterwards buried; and Asa was burnt in the bed which he made for himself, filled with sweet odours and various kinds of spices. In Egypt the practice of embalming obtained from their earliest history, but the practice was confined to that country, and arose from its people holding it unlawful to expose the remains to fire or animals, or to permit them to become a prey to worms. The vast catacombs still remaining on the banks of the Nile were the common receptacle for the general population who could not afford a separate tomb.

Over the ruins at Nimrud, Mr. Layard discovered ancient tombs, of a race unknown, and of which he could not assign any date. Many of the vases, necklaces, and ornaments obtained there have a resemblance to those of the Egyptian tombs. Two or three purely Assyrian cylinders were also discovered in the tombs. Mr. Layard considers that the mode of burial which is there evidenced, more nearly resembles that adopted

by the early Persians. Cyrus and Darius were buried in sarcophagi in troughs. The Egyptian alabaster *πικρος*, or tub, in which Darius was buried, is mentioned by Theophrastus. The Assyrians, like the early Persians, may have buried their dead entire, and preserved the bodies in honey or wax (Herod. lib. i. c. 140, Arian de Bello, Alex. Theoph. de Lapid. c. xv.). According to Ælian, when Xerxes opened the tomb of Belus, he found the body in a coffin filled nearly to the brim with oil. Mr. Layard infers that these tombs belonged to an intermediate people or race who occupied Assyria after the building of the most ancient palaces, and before the foundation of the most recent.

In British India, and in all the south and east of Asia, interment, cremation, and exposure are all practised by one or other of the races occupying it. Java, in the Archipelago, seems to have been peopled from the continent of Asia, and its people have three modes of disposing of the body of a deceased person. By fire, termed *obong*; by water, termed *larung*; or by exposing it upright against a tree in a forest, where it is left to decay, termed *setra*. When the body of a chief or person of consequence is burnt, it is usual to preserve the ashes, and to deposit them in a *chandi* or tomb.

The Ninevites, in all their various monuments, have left us no trace of their ideas concerning the dead, while the sepulchral urns obtained in Babylonia contain the remains of the dead, with jars and utensils for food and water made of baked clay, and with remains of date stones, the head of the dead reverently laid on a sun-dried brick as a pillow. Amongst the urns found on the plain of Bushire each had a pointed end, and at its mouth a bowl or basin without bottom; not united to the main part by means of agglutination, but very closely fitted, and supported in its place by the general bed of earth. These urns lay horizontally, not parallel with each other, but on a straight line, and in the direction of east and west. In one urn was a quantity of sand, with the bones of a full-grown person, completely filled, and very heavy. The skull was placed about the middle or widest part, not in the basin, which contained only sand. Of this urn the greatest circumference was 2 feet 9 inches, its length 3 feet 4 inches, including the bowl or basin, which separately was near 8 inches. The urns, made of clay, are about 1-3d of an inch thick, and solid at the pointed end, but the bowls without bottoms. The insides had evidently been coated with some bituminous substance; but the urns nowhere exhibited inscriptions nor any other mark by which their degrees of antiquity might be ascertained.

The ancient coffins of the Chaldeans were of clay, some of them shaped like a dish cover, the head being placed on a pillow of sun-dried brick, and jars and utensils for food and water. There were also jar coffins, and they seem to have been interred in artificial mounds.

Their ancient tombs, rare in Assyria and Upper Babylonia, are chiefly in Chaldæa proper; and the Rev. G. Rawlinson (i. 107) suggests that the dead may have been conveyed to the sacred land of Chaldæa, similarly as the Persians even now send their dead to Karbila and Meshid Ali, and as the Hindus from remote India send the bones, or the entire bodies, to the Ganges at

Benares. There, Chagda or Chackrada, near Sookasgur, is an abyss said to have been made by the chariot wheel of Bhagirath. The place is a great Golgotha, where the dead and dying are brought from a great way off to be burnt and consigned to the Ganges. The deceased is seldom conveyed by any of his relations, unless from a short distance. Poor people generally send forward their dead for incineration in charge of bearers, who never betray the trust reposed in them.

The Romans generally burned, but they sometimes buried their dead; and children who died in infancy were interred in the immediate neighbourhood of their former homes. Their sepulchral urns, with the ashes of the dead, were commonly buried about two feet below the surface, and their memorial stones were often inscribed. They used the sarcophagus, or massive stone-coffin, and also the tumulus or barrow. They bore their dead with much lamentation to the funeral pile, on which, after being lighted, they cast the robes and arms of the deceased, as well as the slaughtered bodies of his favourite animals.

The ancient Greeks, in laying out their dead, always placed an obolus or Greek coin in the mouth, to pay Charon's fare across the rivers Styx and Acheron, and a cake made of flour and honey to appease Cerberus. Amongst them men cut off their hair when they attained the age of puberty, and dedicated it to some deity. Theseus is said to have repaired to Delphi to perform this ceremony, and to have consecrated his shorn locks to Apollo. After this it was again allowed to grow long, and only cut off as a sign of mourning. Thus at the funeral of Patroclus (*Iliad*, xxiii.) the friends of Achilles cut off their hair, and

'On the corse their scattered locks they throw.'

In some parts of Greece, however, it was customary to wear the hair short, and to allow it (*Cassandr.* 973) to grow long when in mourning.

'Neglected hair shall now luxurious grow,
And by its length their bitter passion show.'

In Luristan, the female relatives, on the death of their male relatives, cut off their hair, and hang the locks around the tomb. The young women and young men of the island of Delos cut off a lock of hair before marriage, and place it near the tomb of the virgins from the Hyperboreans.

Barrows or mounds of earth have been largely used by the nations of Central Asia, from the Mediterranean to the Pacific Ocean, both in ancient times and now. The king of Ai, slain by Joshua (*Josh.* vii. 26, viii. 29), was placed at the entrance of the city, and over his body was raised a great heap of stones. Herodotus mentions that the barrow of Alyattes, king of Lydia, was 1300 feet broad, and nearly a mile in circumference, and it has been identified by modern travellers. Barrows were the favourite memorial of the Teutonic race, some of them very large; but the Saxons used also cists or stone coffins. The custom of raising tumuli over the remains of the mighty dead, seems to have been prevalent in the Central Asiatic region from the most ancient times and been taken into Scandinavia. Ezekiel, xxii. 27, describes the practice of slaying persons and interring them with their dead chief. Herodotus also describes the barrow burial of the

Scythians; and to the present day, in the region of the Kar Karella, and in many other parts of the steppe occupied by the Kirghiz, are to be seen numerous tumuli of great size. Herodotus tells us that when a king died, his corpse, embalmed and covered with wax, was conveyed in a chariot in solemn state to the place of sepulture; a large quadrangular pit was dug; in this they placed the royal corpse on a mattress of straw; on each side of this they planted spears, and covered it with wood, and roofed it over with hurdles of willow. In the remaining part of the pit they interred one of the late king's women, strangled for the purpose, together with his cupbearer, his cook, his groom, his minister, his courier, his horses, as well as some articles of every kind, including several goblets of gold, that he might be supposed to need in his journey to the other world. This done, the people eagerly contended with each other in the work of heaping over the whole a mound of earth as vast as possible. The proceedings did not here terminate; for the year following, fifty of the late king's confidential attendants, and fifty of his horses, were slain, and placed, the men on the horses, around his sepulchre.—*Melp.* 71, 72. When Chengiz Khan died, his remains were covered with a lofty mound, and extensive forests were planted to exclude the footsteps of man. Colonel Tod tells us that the tumulus, the cairn, or the pillar, are still raised over the Rajput who falls in battle; and throughout Rajwara sacrificial monuments are found, on which are seen, carved in relief, the warrior on his steed, armed at all points; his faithful wife (*sati*) beside him, denoting a sacrifice; and the sun and moon on either side, emblematic of never-dying fame.—*Tod's Rajasthan*, i. p. 74. In Saurashtra, also amidst the Cathi, Comani, Balla, and others of Scythic descent, numbers of palia or joojar (sacrificial pillars) are conspicuous under the walls of every town, in lines, irregular groups, and circles. On each is displayed in rude relief the warrior, with the manner of his death, lance in hand, generally on horseback, though sometimes in his car; and on the coast the pirates of Budha are depicted boarding from the shrouds.

In the Panjab, near Bamian, in Afghanistan, and near Kābul, the sepulchral monuments remaining of ancient times are topes. They consist of a mound, on which is erected a cupola, supported by walls of masonry, more or less in a Grecian style of architecture. One near Manik-yala is 80 feet high and 320 feet in circumference. In its centre were found vessels of gold, silver, and copper, with coins of Rome and the Bactrian Greeks. In a chamber 60 feet deep was a copper box containing animal remains. It is one of many topes or stupas.

Many cairns are found in different parts of Southern India, and, prior to the stupas or topes, this seems to have been a common mode of covering the dead. Indeed, as Colonel Cunningham remarks, the tope is only a cairn regularly built. On the Neilgherry hills are found remains of cairns, cromlechs, kistvaens, and circles of upright loose stones, which are nearly identical with those found in Europe in the ancient seats of the Celts. In these cairns are found vases, cinerary urns, and other vessels of glazed pottery, which sometimes contain human bones, more or less charred, and mixed with ashes; sometimes a little

animal charcoal alone. They are met with in various districts in the Presidency of Bombay, in almost every part of the Dekhan and peninsular India, from Nagpur to Madura, in immense numbers on the Annam hills, a range on the south side of the great Coimbatore gap, which forms the commencement and northern face of the Southern Ghats, those on the Annam being of a more advanced order and a better condition than the Neilgherry tombs. Similar remains are found in Circassia and Russia, and circles of stones surrounding ancient graves are found on the south Arabian coast and in the Somali country in Africa. Major Congreve directed much attention to those on the Neilgherry Hills; and Captain Meadows Taylor discovered and examined a large number of these remains at Rajan Kooloor, in Sorapur, and also at Siwarji, near Firozabad, on the Bhima, and devoted much attention to the comparison of them with similar remains found in England. He calls them Scytho-Celtic or Scytho-Druidical. Neither the hill people, the Toda and Kurubar, nor any Hindu, knows anything about the race to which these sepulchral remains belonged; and neither in Sanskrit literature nor in that of the Dravidian languages is there any tradition on the subject. The Tamil people generally call these cairns *Pandu-kuri*. *Kuri* means a pit or grave, and *Pandu* may refer to the *Pandu* or *Pandava* brothers, to whom so much of Hindu mythology relates. The race who raised these cairns were probably dwellers in the country prior to the advent of the present Dravidian occupants, and were expelled by or ultimately became absorbed in the latter; or they may have been a nomade shepherd race, who had wandered into India after it was peopled and settled, and then wandered out again, or became absorbed amongst the people of the country. But the remarkable fact connected with the people whose religious rites and usages of sepulture gave rise to these cairns, is that they have everywhere disappeared from Southern India, and not even a tradition of their existence survives.

In the centre of peninsular India, around Hyderabad, in the Dekhan, and at Bolarum, and at Secunderabad, there are many burial-places of that race, of whose existence nothing is known; and about 20 miles S.E. of Secunderabad is one great resting-place of the dead, a vast burial-ground extending over miles, which must have been the place of interment of a huge number of people, or used through many centuries. The mode of interment in all these has been to select a large stone, beneath which a winding tunnel or way had been excavated; and the remains of bones and urns, with weapons, are found deposited in a central cavity, a circle of large loose stones being drawn around, the circumference of some of these circles being between one and two hundred yards. The people whose tombs are thus represented were undoubtedly nomades dwelling in tents, for not far off are the remains of a great nomade city, consisting solely of walls, within which the tents must have been erected, for no stone nor earth heap nor mound remains within the same enclosure to indicate the former existence within of any building. The remains found within these cairns also leave the impression that, as with the barrow burials, the wives and servants were slain and interred along with the chief person; and the

Hindu and Rajput practice of *suttee* (*sati*) would therefore seem to be merely a continuation of the ancient Scythic sepulchral rite of immolating the favourite wife, the servant, and the horse to accompany their master and serve him in the next world.

The Christian treatment of the dead is various; and in Europe, to this day, the indifference, not to say levity, of the Italians, in all relating to their dead, contrasts strangely with the tenderness and sentiment of the Germans, both Romanist and Protestant, as displayed in their cemeteries. In Naples, where are two cemeteries, with a pit for each day of the year, the humbler dead are stripped, and after a priest has read prayers over the bodies, they are all thrown into a hole by the cemetery assistants, amidst oaths and jocularly and laughter. The richer dead are stripped, placed in dry sand to be shrivelled up, and when dry they are dressed in their usual clothes, ticketed, and placed in a glass case. The German race, on the other hand, reverently dispose of their dead, and preserve in neatness the grounds and tombs of their cemetery, which they call *Gott's Aker*, God's field, but after a few years the ground is re-ploughed to be refilled.

In Ceylon, formerly, after burning the bodies of the deceased kings of Kandy, their ashes were carried by a man in a black mask to the Mahawelli Ganga, where he embarked in a canoe. At the deepest part of the river he clove the vase with a sword, scattered the ashes on the stream, and, plunging headlong after them, dived, arose near the opposite bank, whence he fled to the forest, and was presumed to be never more seen. The canoe was allowed to drift away, the horse and elephants that accompanied the procession were set at liberty in the woods, and the women who had strewed rice over the remains were transported across the river and forbidden to return.

Several of the Hindu customs resemble practices mentioned in the Old Testament, as in Jeremiah xvi. 6: 'Neither shall men lament for them, nor cut themselves.' For the Hindus, on the death of a relation, express their grief by loud lamentations, and not unfrequently, in an agony of grief, bruise themselves with whatever they can lay hold of. Ezekiel xiv. 25: 'They shall come at no dead person to defile themselves;' and touching the dead defiles a Hindu, who must bathe to become clean again. Job xxvii. 19: 'The rich man shall lie down, but shall not be gathered,' i.e., his soul shall be left in a wandering state; and Hindus believe that persons for whom funeral rites have not been performed, wander as ghosts and find no rest. Jeremiah xxxiv. 5: 'So shall they burn odours for thee.' Scented wood and other odoriferous substances are placed upon the funeral pile of a rich Hindu, and burnt with the body. Matthew ii. 18: 'Rachel weeping for her children, and would not be comforted, because they are not.' The lamentations of a Hindu mother for her child are very loud and piercing; it is, indeed, almost impossible to conceive of a scene more truly heartrending than that of a whole town of such mothers wailing over their massacred children. 'In Rama was there a voice heard, lamentation, and weeping, and great mourning.'

Rajendra Lal Mitra, writing on the funeral ceremonies of the ancient Hindus, says the first ceremony was the removal of the dead from the

house to the burning ground, and this was done on a cart, drawn by two bullocks, or by aged slaves. The procession was headed by the eldest of the party, and included an old black cow. The animal was sacrificed at the burning ground, and its fat, flesh, and organs were placed on the corpse, which was subsequently enveloped in the raw hide of the animal. The wife of the dead was made to lie by the corpse, and was thence removed by a younger brother, a fellow-disciple, or a servant of the dead, who offered to marry her. The ceremony of burying the bones was performed on the 3d, 5th, or 7th day; and on the 10th day the mourners assembled together, and, after certain oblations, offerings, and prayers, raised a circle of stones, and then retired to the house of the chief mourner to feast on kid's flesh and barley.

As a rule now, the dead of Vaishnava Hindus are burned. As death draws near, a lamp is lit at the bed-head, and a 'homa' sacrifice performed with camphor and cocoanut; and as life dies out, the five elements of the cow are dropped into the mouth of the moribund from a tulsi leaf. Within two or three hours the body is lifted, and this is done early, as none of the household nor any of the neighbours can partake of food until the remains be disposed of. The pile of wood or cow-dung cakes used is about two feet high, and on it are placed some tulsi leaves, a little sandal-wood, and the deceased is laid with his feet to the north. When laid on the pile, a cloth is placed over the face, and raw rice is placed on it over the mouth. The heir of the deceased places a charred bit of sandal-wood or a tulsi branch at each corner of the pile, and a Vityan sets fire to the mat, using fire taken from the sacred fire lit at the bedside of the dying man. On the following day the heir and friends visit the pile, remove the skull and the bones, on which he and all with him pour water and wash them,—wash them with the sikai, anoint them with oil and honey, and clean them with milk, and place them all on plantain leaves anointed with butter. A young cocoanut shoot is then placed on the skull, and the whole put into an unburned earthen pot, and taken or sent to a river or to the sea; the person who conveyed it returning to the temple, where he pronounces aloud the deceased's name, and adds, 'Pray for him.' Often they are sent to a holy river, even to the Ganges at Benares. The men relatives shave. The hair of the Brahman widow's head is shaved. The body is not always carried through the doorway of the house. If it be an inauspicious day, or if the house door be so placed that the courtyard has to be crossed, then the remains are carried through an opening broken in the wall. Captain Butler, writing of the Hindus of Assam (*Travels*, p. 228), says if a man die inside a house, no Hindu can eat in it afterwards, or reside in it, as it has become impure; it is generally pulled down and burned, and a new house erected on the same spot. All Assamese, when dying, are therefore invariably brought out to die in the open air on the bare ground, that the building may be preserved, and also to ensure the happier liberation of the spirit from the body. The remains of Hindus are unclothed for the last rites.

Children under eight years of age and unmarried girls are buried, as also are all who die of smallpox, as the belief is that this ailment is a manifestation

of the presence of the goddess Ammun, Mariatha, Mariamma, or Kali, and the anger of the goddess would revert on the family if burned. The dead from cholera are similarly buried.

In the mode of disposing of the dead, the wish expressed by the deceased is attended to. Vedantists all bury; also all the Gosai, all the Lingaet or Vira Saiva, the five artisan castes, the Kansala, goldsmith, carpenter, ironsmith, brazier, and stone-cutter, all the Byragi and Sanyasi, and the gurus of the sects, the Pandarums, the Kashai, likewise all the non-Aryan races and tribes not admitted into Hinduism. The dead of the Vedantist sect, and those of the Lingaet and artisans, are placed seated, the last in a grave five feet square, with a ledge on the south.

As the artisan's life becomes extinct, the body is made to assume the attitude to be preserved in the procession and in the grave. It is placed against a wall, the legs are crossed underneath in the usual sitting attitude, and the head is fastened to a nail driven into the wall, and so retained till rigidity ensue. They are borne to the grave in a car, on the shoulders of relatives or friends. On reaching the burial-place, the Oodwan reads prayers, and the body is seated on the side ledge with its face looking northwards; salt and ashes of cow-dung are placed on the head.

Amongst the Aryan Hindu, the great bulk believe in spirits and worship them; their worship of ancestors, 'pitri,' is continuous; they also believe in demons and evil spirits; transmigration through clean and unclean animals is a point of faith, and a great majority regard the soul as an emanation from the Deity, and look to re-absorption and annihilation as the point of attainment for the good. Many of these are Buddhist views.

Hindus of Sind are not allowed to die in bed, otherwise one of the males of the family who has attended upon the deceased becomes in a state of impurity, and must visit some well-known place of pilgrimage, as the Dhara Tirth, the Narayan-Sar in Kutch, etc. When near death, the sick person is placed on a spot smeared with cow-dung (Chanko, Lapan, or Poto), and when in the last agony, the five sacred elements are poured into the dying person's mouth.

The Mahomedan, when about to die, has his spirit calmed by the 'Yasin' chapter of the Koran being read to him, and is either washed (Ghassal) at his own house, or taken, within a few hours, to a Ghassalkhana, specially built for the purpose, near the cemetery, and where men or women washers perform the duty, and then put on burial clothes and apply camphor and antimony. The body is conveyed in a box with much solemnity, with wreaths of flowers and perfumes laid over the covering; the coffin is carried on men's shoulders, and from time to time is heard the Ty-eb part of the Mahomedan creed: 'There is no deity but God, and Mahomed is the prophet of God;' and on reaching the grave, funeral service is read, consisting of the four portions of their creed (takbir), and a blessing (dua) is asked, which all present repeat. After the Fatiha, the body is lifted from the coffin and gently lowered into the grave, laid with the head to the north and feet to the south, and turned on its side with the face towards Mecca. Each person then takes a little earth, and, repeating the words in chap. 112 of the Koran, 'We created you of earth and

we return you to earth, and we shall raise you out of the earth on the day of resurrection,' he puts the earth gently into the grave. The body is then protected with wood and covered in. The *Fatiha* is again repeated, and again at the door of the cemetery, and at this juncture two angels, *Moonkir* and *Nikir*, approach the dead, make him sit up, and inquire who his God and prophet are, and what his religion is. If he has been a good man, his answers are satisfactory, and odours from paradise are diffused around the departed; but if bad, he is bewildered, and these angels torture him. They believe that the dead continue in a conscious state, and dogs and horses or other polluting animals are not allowed within the cemetery; women, also, do not enter, lest the repose of the dead be disturbed. Mahomedans do not speak of a person as dead,—they say he has passed away, has taken his departure; and the living all believe in, and hope for, resurrection in a future state: 'They who believe and do that which is right, shall enjoy blessedness, and partake of a happy resurrection. . . . Paradise . . . is watered by rivers; its food is perpetual, and its shade also; this shall be the reward of those who fear God' (Koran, ch. xiii.). 'Therein are rivers of uncorruptible water; the rivers of milk, the taste whereof changeth not; and rivers of wine pleasant unto those who drink; and rivers of clarified honey; and therein shall they have plenty of all kinds of fruits; and pardon from their Lord' (ch. xlvii.). 'There shall be gardens with shady trees; with fountains flowing, couches of silk interwoven with gold; beauteous damsels with black eyes lying on green cushions, and beautiful carpets, fruits, palm trees and pomegranates' (ch. lv.).

The monuments over Mahomedan tombs have usually been of earth, or of unbaked brick; but every material, and of the most enduring kind, is employed, and the names are sometimes engraved on the tombstones. The tombstone of a man is distinguished by a raised part in the centre, and that of a woman by a depression. In Turkey, a pillar with the carved figure of a turban distinguishes the grave of a man. The prevalent form in India of Mahomedan tombstones of the rich is a dark or black tombstone, with verses of the Koran engraved on it, and covered by a cupola. Some of these domes are very magnificent. Those of the *Adal Shahi* dynasty at *Bijapur* and *Gogi* have attracted much attention, as also have those of the *Bahmani* dynasty at *Kulbarga* and *Kutub Shahi* dynasty at *Golconda*. The cupolas at *Roza* where *Aurangzeb* is buried have not any display, and that of *Aurangzeb* is the least ostentatious. His daughter's tomb at *Aurangabad* is large, and many of the tombs at *Dehli* and *Agra* are great structures. That of *Mumtaz Begum*, known as the *Taj Mahal*, is particularly remarkable. Reformers amongst the Mahomedans consider that unbaked brick or earth should alone be used.

The Christian doctrine that man, in all that he can do of good, is still without merit, is not shared in by any of the Mahomedan, Buddhist, or Hindu sects, who all consider that a personal merit is gained by their good doing; and a Mahomedan passing a funeral of a Mahomedan, turns with it a short way, and lends his shoulder to convey the body to the grave, to bring a merit on himself.

The Parsee or Zoroastrian race are to be found scattered from Hong-Kong in the east to Great Britain in the west, a small but intellectual remnant of the once great Median nation. A considerable body of them dwell in Bombay, in Gujerat, and the western towns of India. Their sick are never allowed to expire on a bed. When the moment of passing away is near, the sick person is removed to the ground, and bathed and washed. The reasons alleged for this removal are various; but the one ordinarily accepted amongst them is that a dead body is an unclean thing, necessitating that all who touch it shall destroy their clothes, and whatever is touched by it must be destroyed. For these reasons, the dead, in Bombay, are carried by a class of Parsees called '*Nessus salar*,'—*Nessus* meaning unclean (*Najis*, PERS.). These men, clothed in white, carry the remains to the *Dokhma*, or tower of silence, and lay the body on its raised upper floor. The *Dokhma* is without any roof covering; is open to the sky, so that birds of prey, vultures, kites, have the freest approach. The raised floor has a deep well, surrounded by a raised platform, with channels converging to a well. The corpse is laid on a partition of the platform, and the decomposing matters flow along the channels into the well. When the well is full, the bones are removed and buried outside the *Dokhma*. The fire-priests are paid to pray for the dead, monthly, for a year, and thereafter on every anniversary of the demise. After the demise, and before the removal of the body, a dog is brought near to gaze on the departed. This is the '*Sag-did*' or dog-gaze, and, by one account, is said to be had recourse to with the object of ascertaining, from the dog's movements, the state of the soul of the departed; by another account, it is practised from the belief that the dog is a naturally chaste animal, and the view of the chaste dog falling on the dead will expedite the translation of the soul to heaven across the *Chigvan* bridge. See Bridge.

The *non-Aryan* and non-Hindu races of British India are estimated at about 20 million souls, but, except the great *Gond* nation, and the *Kol*, the *Bhil*, and the southern *Shanars*, most of them are in small tribes, and many are occupying forests and mountain fastnesses, or are dwelling on the outskirts of towns. They in general bury their dead.

The *Sowrah* of the hill ranges of the *Circars*, mostly those hills near *Chicacole*, near *Kalahanda*, and southwards as far as *Bradachellum*, bury their dead with their weapons.

The *Chenchwar* race, farther south, in the forests of the *Nalla-Mallai*, bury their dead and sometimes burn, and, like the *Tartar* races, they carry the deceased's weapons to the grave.

The *Kuki* race of *Assam*, up to the middle of the 19th century, continued to make inroads on the plains, not for plunder, but to secure heads, and they have been known to carry off fifty heads in a night. On the death of a chief, the body is smoke-dried, and kept for two months with the family. If a raja fall in battle, they immediately proceed on a head-hunting expedition, and bring in the heads of those they kill, hold feastings and dancings, and, after cutting the heads into pieces, send a portion to each village. This is considered in the light of a sacrifice to the manes of the deceased.

The *Khassya* hill race, 4000 to 6000 feet above

the level of the sea, inter their dead on the undulatory eminences of the country. These are dotted with groups of huge unpolished squared pillars and tubular slabs, supported on three or four rude piers. Menhir are there; one of them seen was 50 feet out of the ground, 6 feet broad, and 2½ feet thick, and in front of each is a dolmen or cromlech of proportionately gigantic pieces of rock.

In *Tibet* there are four modes of disposing of the dead, viz. incremation, throwing into the rivers and lakes, exposure on the summits of mountains, and cutting the dead bodies and giving them to the dogs to eat, which is the most flattering of all. The dogs of the envions devour the poor, but for the rich there are establishments with dogs for this purpose.—*R. A. S. J.*, vi., 1872-3.

In *Tibet*, the sovereign Lamas are deposited entire in shrines prepared for their remains, which are ever afterwards regarded as sacred, and visited with religious awe. The bodies of the inferior Lamas are usually burnt, and their ashes preserved in little metallic idols, to which places are assigned in their sacred cabinets. Ordinary persons are treated with less ceremony. Some are carried to lofty eminences, where they are left to be devoured by ravens, kites, and other carnivorous animals. But they also have places surrounded by walls where the dead are placed.

Mongols sometimes bury their dead; often they leave them exposed in their coffins, or cover them with stones, paying regard to the sign under which the deceased was born, his age, the day and hour of his death, which determine the mode in which he is to be interred. For this purpose they consult some books, which are explained to them by the Lamas. Sometimes they burn the corpse, or leave it exposed to the birds and wild beasts. Children who die suddenly are left by their parents on the road.—*Timkowski's Peking*, ii. p. 312.

In *Spiti*, in the N.W. Himalaya, when a person dies, the body is sometimes buried, or burnt, or thrown into the river, or cut into small pieces and burnt. Admonitions are made over the body to the departed spirit, such as, 'Do not trouble yourself, you cannot enter it (meaning the dead body); in summer it quickly becomes corrupt, in winter it freezes and is too cold for you.'

Amongst the Buddhist Burmese, whose religion teaches them to look on death as a release from the cares and troubles of the world, as a possible cessation of transmigrations and the longed-for arrival of annihilation, the cremation of the remains of friends, relatives, and teachers, are not seasons of grief; the spectators are often able to look on them with joy. The Rev. Mr. Marks went to see a sick pupil, whose mother met him at the door. To Mr. Marks' inquiry as to her child's state, she replied, 'He is well, he is well,' and skipping, half joyfully, half hysterically, before him, led him to an inner room, where the pupil lay dead, but the bereaved mother, full of faith, was still able to say, 'He is well.' The remains of holy men, the phoungye, are not soon removed. Their bodies are placed in honey, sometimes for a year or more. One at a phoungye house in Kemmending, adjoining the editor's dwelling-house, was kept in honey for a year, and then removed. In the process of embalming, the body is placed in honey for a few weeks, the intestines are then removed, and replaced by spices, and the body is encased in a

sheathing of wax, which is coated with lac, and this gilded with gold-leaf. The body is then left to dry on a staging, under a white umbrella, and finally the coffin is placed on a model of a kneeling elephant, made of wood and paper. On the day appointed for the funeral of the priest, a great crowd assembled, and, with two ropes attached to the car, one part of the multitude pulled it towards the place of cremation, another pulled against them, and, with shouting and laughter, drumming and uproar, the remains at length reached the burning place and were burned. Looking quietly at the opposing multitudes, their antagonism seemed a representation of some ancient idea of good and bad spirits battling for the dead. But the object of this struggling to draw the car onwards and to retard it is unknown.

In September 1870, the remains of the queen-mother of Burma were burned between the inner and outer walls of the palace, to the north of the main entrance. A large space was enclosed by a fence or yamazat, in the centre of which the burning took place. Inside and outside of this, numerous temporary sheds were run up for the princes, queens, ministers, etc. Above, where the fire was to be placed, a lofty structure of bamboos was erected; this was covered with white cloth. The body of the late queen-mother was laid out in state in one of the pavilions to the south side of the palace, the gardens being for the time open to all. The troops were under arms in the great square and other parts of the palace open to the public, a large space in front of the enclosure being kept clear for the king and his retinue. About 10 A.M., the first of the procession accompanying the coffin appeared at the inner gate of the palace, and slowly marched towards the pyre, all taking up their respective positions with order and regularity. Save the troops, all taking part were in white; but the numerous gilded palanquins, gold umbrellas, together with the splendid bier, with the white umbrellas joined to the green coats, red and gilt headpieces of the troops, with the numerous elephants, gaudily trapped, placed here and there, made the scene barbarously splendid. Following or preceding the bier were the princes and princesses, the queens with the Pagan Meng, the late king. He and the first queen, whose mother the deceased was, walked in front of the bier. About a quarter to eleven the great inner gates were again thrown open for the exit of the king and retinue. The king was seated in a large gilded palanquin, borne on the shoulders of some 40 or 50 men, and was accompanied by four of his daughters and one son, all young. He, like all the others, was dressed entirely in white. Advancing up to about ten yards from the front of the enclosure, the palanquin was halted, the retinue and guards filing off right and left, and forming a large hollow square. Prayers were said by several phoungye, the king gave directions as to the exact minute at which the cremation was to commence, the bearers turned round, the procession was re-formed, and moved inside the great gates, which were again partially closed, while drums, tom-toms, and cymbals were beaten, and trumpets (?) sounded, amidst a tumultuous noise. The queen, princes, Pagan Meng, etc. etc., returned to the palace, shortly after the cremation was completed, in the same order as they came out. The coffin was

overlaid with gold to the extent of 7½ viss, which was afterwards distributed among the phoungye, or to be applied to the building of a pagoda. Charcoal was employed at the burning of the body, and was kept at a red heat by numerous bellows placed all round. The whole of the body with the exception of a small part of the back of the skull was reduced to ashes, or at least consumed on the fire. This small piece, little bigger than a rupee, was placed in a gold cup closed by a lid studded with rubies, while the remains of the charcoal and ashes were placed in earthenware vessels to be carried to the river. The gold cup was confided to an official, who took his place in the hearse. Having arrived at the river bank, those deputed for the purpose entered two gilded boats lashed together, but a little apart, which were rowed out into the centre of the stream. Here a halt was made. The bearer of the gold cup, with it rolled up in his putzoe, jumped into the water, and while he was underneath let it go. At the same time the jars of ashes had their contents poured into the stream, the man was picked up, and there was an end of the ceremony.

On the death of a Burmese, the body is washed, the two thumbs are tied together, a piece of gold or silver money is put in the mouth, as Kadoakah or ferry toll, and after a day or two placed in a coffin on a bier, which the young men carry to the burying-ground, halting from time to time to sing and dance, keeping time to the song. The tsandala or gravediggers place the coffin on the funeral pile. Persons dying of cholera, smallpox, and the young under 15 years of age are buried; 7 days after the funeral, the leip-bya or soul of the deceased is released from the house by the house Nat.

Karen relatives, after burning the body, collect the bones, and, at an annual festival, the bones of all who have died are carried and interred in a consecrated Ago toung or hill of bones.

In *Siam*, the poor are buried or exposed to beasts of prey; if above the lowest class, the deceased, after the bowels have been extracted, is laid in a wooden coffin, externally lacquered and gilt, and this is placed for some days on a high table. In the meantime the priests light up tapers, burn perfumes under the coffin, and chant funeral hymns at night. A procession of relatives and friends dressed in white and covered with white veils follow the corpse. Beside it are borne figures of various animals or singularly-shaped monsters carved out of bamboo, and the accompanying talapouns exclaim, 'We must all die, we are all mortal.' The mourners attest their sorrow by their tears, and often hire women for the express purpose. The body is then taken from the coffin and placed naked on the pile, which is set fire to, and the remains are scorched. The body is then replaced in the coffin and deposited under one of the pyramids erected about the temple. Graves are held sacred among the Siamese, and their violation is considered as a heinous offence. They refuse the honour of burning to persons killed by accident, by lightning, to the still-born, to those who die in child-birth or from smallpox, and to suicides. The remains of such are either thrown into the water, or exposed to beasts of prey.

With the *Chinese*, when life has departed, the dead body is arrayed in robes of state, or in most costly apparel; ablutions are not performed, nor

any unnecessary handling of the body suffered. White is the sign of mourning. The Chinese worship the spirits of the dead, and, amongst that nation, the desire to have a good coffin is universal. Many purchase for themselves that last tenement, and keep it by them, and it is usually substantial, of metal or wood. In *Burma*, where many Chinese are settled, the best block of teak is selected, and the upper portion being sawn off to form a lid, the block is hollowed and ornamented. These may be seen in Moulmein in every carpenter's shop. In *China*, the coffin-makers' shops have a very gay instead of a lugubrious appearance, as the coffins are usually painted red, or some equally bright colour, and the more expensive ones are decorated profusely with gilding; these coffins are placed on shelves one above the other, and the prices vary from one dollar up to four or five hundred. The funeral customs of *China* vary in the different districts. In *Fo-Kien*, the body is placed in a coffin soon after death, a fan is placed in the hand, a piece of silver in the mouth, and an opening is sometimes made in the roof for the spirit to effect its exit. The tombs are on the hillsides, where lucky spots are chosen by geomancers. Paper images of clothes, horses, and other luxuries are cast into the grave, and a sacrifice of cooked provisions is offered on the day of the funeral. Every year, in the month of April, the whole population visit the tombs and worship the manes of ancestors, sacrifice at the tombs of their relatives, weeping near the graves, and burning fictitious paper money, making offerings of meat, fruit, cakes. Sackcloth is the material for mourning.

Most of the Chinese cemeteries have a sacrificial temple, to which are attached extensive suites of rooms for the reception of the coffins of the richer members, pending transmission to their native districts, for Chinamen prize the privilege of being interred near their forefathers. The Chinese coffin is of good wood, and ponderous. The lid is morticed on, and carefully closed, all joints cemented so as to prevent all entrance or exit of air. Only a small aperture is drilled through the lid over the face, so as to allow the entrance or exit of the spirit at its option. Sometimes a humble family will keep the coffin for many months in their house till able to purchase a tomb, but the very poor are buried *en masse* within enclosed buildings. The rite of respectful burial is however so revered, that burial clubs exist in all the large cities. The monumental tombs are small raised truncated cylinders. The tombs of opulent Chinese are decorated with statues of men and horses. They run into excess in mourning for the death of near relations. Every part of the ceremonial is exactly regulated; even the period, manner, and degree of the mourner's grief being duly prescribed. The corpse being dressed in warm clothes, and deposited in a substantial coffin, is kept for several days above ground, whilst the survivors express their measured grief by gesture, dishevelled hair, sackcloth, and mournful silence. When a lucky spot has been selected for the grave, the corpse is consigned to the earth. Building a tomb in the form of a horse-shoe, they inscribe thereon the name of the deceased, erect a tablet to his memory in the hall of his ancestors, and repair annually to the grave, in order to prostrate themselves before the manes,

and to offer victuals to the spirits. In the temples, divine honours are paid to their memory. To supply their full wants in the other world, they burn gilt paper, paper chariots and houses, with every necessary article of furniture, which are supposed to be changed in the other world into real utensils, whilst the gilt paper, when burnt to ashes, becomes so much ready money. The greater the personage, the more protracted is the mourning. The emperor mourns three years for his parent, and every good subject follows his august example. Mandarins resign their offices during this period of affliction, literati avoid entering for the examinations, and working people abstain for some time from their labour. Chinese sutti prevailed to a considerable extent up to the middle of the 18th century. It does not appear, however, to have been regarded as a compulsory rite, but was generally the widow's own choice, to show her extreme fidelity, or to escape the hardships of widowhood, or, in the case of dutiful sons, to save the life of a parent. Fire was never used, but opium, poison, or starvation were the means of suicide employed. Yiun Chang was the first emperor who discountenanced those practices, which his immediate predecessors had encouraged; and he forbade honorary tablets to be erected to self-immolating victims. In 1792 a memorial was presented to the emperor, praying for the dedication of a tablet to a most dutiful son, who had cut out his liver in order to cure his mother's sickness. The Imperial Board of Rites, after mature deliberation, respectfully observed that the practice of cutting out the liver is that of the ignorant, showing a contempt for their lives, and after all but foolish devotion, and a decree was issued discountenancing the custom. The Chinese, like Christians and Mahomedans, plant trees in their cemeteries and around the tombs. The cypress is a favourite with all these religionists, and in northern Europe the yew is much planted.

The *Japanese* have a great respect for the dead. They place the remains inside a kind of square tube, and in a sitting posture. To obtain this position, they are said to use the Dosio powder, which, placed within the mouth of the corpse, is said to have the effect of relaxing all the muscles. The hollow square is carried in a chair or norimon by four men into the yard of the Tera, escorted by a few women dressed up in bright colours, wearing a veil of white crape on the head. They are here met by the Ochaushan and a number of minor canons, who chant to the sounds of the tom-tom, the whole company awhile moving with the body around the temple, into which they at length rush with a great noise. Prayers are then read over the body, and it is removed to be burned. If the deceased has been a person of rank, the ashes are deposited in an urn, and buried within the sacred precincts of the Tera. In the procession there is very little affectation of sorrow; they seem to regard it as a joyful occasion, and the whole ends with a feast at the house of the deceased.—*Boutell's Manual of British Archeology*, London 1868, p. 100; *Raffles' Hist. of Java*, i. p. 327; *Travels of a Hindu*, i. p. 18; *Edinburgh Phil. Journ.*, July 1867; *Madden's Sepulchres*, i. pp. 368-457; *Picard; The Bible; Homer's Iliad; Baron De Bode's Travels in Luristan*, ii. pp. 218, 219; *Englishwoman's Domestic Magazine*, No. 49; *Tod's Rajasthan*, i. p. 47; *Dr. Caldwell's*

Comparative Grammar; The Koran; Madras Journal of Literature and Science; Timkowski's Journey to Peking, ii. p. 212; *Burton's Scinde; Butler's Travels; Forbes, 277; Rawlinson.*

BURIGOPAN. BENG. *Dipteracanthus dejectus*.

BURI MAE. HIND. *Tamarix Indica*.

BURJ. PERS. A bastion, a fort. Buruj, the plural, is applied to the signs of the zodiac, in order, as Masudi says, to mark the position of the stars with reference to these fixed objects. The word burj is widely diffused. In Gothic Bairgan, and Saxon Beorgan, to fortify; Thracian Bria, a city (Strabo, vii.); German Burg, a city; and English Borough, Burgh, and Bury, so frequently the affix of the names of towns. All places in Britain that in the old time had the name of Bourroughs, were places one way or other fenced or fortified. The Greek Purg-os is evidently the same word, signifying a tower, and hence applied also to a dice-box,—Mitteret in pyrgum talos (Hor. Sat. ii. 7, 17). It enters commonly into the name of fortified towns,—one in Mysia (Anabasis, vii. 8, 8); in Thrace (Herod. vii. 112).—*Elliot, Supplemental Glossary; Restitution of Decayed Intelligence*, ch. vii.

BURJ. HIND. *Betula bhojputra*, B. Jacquemontii, *Spach*.

BURJA. TEL. *Hymenodactylon excelsum*.

BURKA. ARAB. A veil, a woman's face veil; also a door curtain, and the curtain which is suspended over the entrance of the Kaba.

BURKUK, Khubani, Mishmish, Bakur-Khanee, HIND., vars. of *Armeniaca vulgaris*; the apricot.

BURMA, as now known to Europe, was formerly the site of four kingdoms, viz. Arakan, Tha-hlun, Martaban, and Pegu. It is still subject to two dominions, being partly a British province and partly under a Burmese ruler, the two portions being designated respectively British Burma and Independent Burma.

British Burma comprises territories conquered in the two wars of 1824-26 and 1852-53. The features of the country are of a varied character. The Yoma mountains and the Tenasserim range stand prominently to the view. On the Arakan coast is the Naf estuary; and there also are the Mru and Koladyn or Arakan rivers. In the Pegu district are the Irawadi, the Hlaing or Rangoon rivers, the Pegu, Sitang, and Bhileng; in Tenasserim the Salwin and the river of Tavoy.

The British portion consists of the long strip of land lying between lat. 9° 55' and 26° 50' N., and long. 92° and 99° E., an area of 88,556 square miles, with a population in 1881 of 3,707,646. *Arakan*.—Males, 384,045; females, 257,963; total, 562,008, against a total of 484,363 in 1872, thus showing an increase of 77,645, or 16 per cent. *Pegu*.—Males, 1,249,346; females, 1,081,061; total, 2,330,407, as against 1,662,658 in 1872, or an increase of 668,349, or 40·2 per cent. *Tenasserim*.—Males, 431,270; females, 380,548; total, 811,818, as against 600,727 in 1872, or an increase of 211,091, or 34 per cent. The totals for the entire province are—males, 1,984,661; females, 1,719,572; total, 3,707,606, as against 2,747,148 in 1872, showing an increase of 957,085, or 34·8 per cent. Rangoon in 1872 contained a population of 98,745; it now contains 132,004, showing an increase of 33,259, or 36·6 per cent. In 1872 the population of Moulmein was returned at 46,472.

In 1881 it was returned at 53,080, or an increase of 14 per cent.

A treaty is said to have been entered into in 1757 between the Indian and Burmese Governments, and in 1795 Captain Michael Symes was sent as envoy to Ava; but from 1797 disputes regarding Arakan began, and fugitives into Chittagong were in 1798 demanded from the British. On this Colonel Symes returned to Rangoon, where he was not treated with ordinary civility by the governor, and he left for Bengal in January 1803. After this, Captain Canning was sent on two occasions, the latter in 1809. On the first he was treated discourteously, but on the second with civility. In 1811 the Arakanese rebelled, and invaded Burmese territory; and in 1811 Captain Canning was again sent to mediate. Subsequently to that year the Burmese officers in Arakan more than once made demands for the surrender of Arakanese refugees, and even made pretensions to the sovereignty of Bengal as far as the city of Murshidabad, as territory pertaining to the kingdom of Arakan. In 1819 they interfered in Assam, and in 1824 they invaded Cachar. War was declared against Burma on the 5th March 1824, and, after two campaigns under Sir A. Campbell, a treaty of peace was signed at Yandaboo on the 24th February 1826, on which occasion parts of Assam, Arakan, and Tenasserim were ceded to the British. Subsequently, in 1851, in consequence of the Burmese refusing redress to a British shipowner whom they had injured at Rangoon, war was again declared, and was conducted successfully by General Godwin. Rangoon fell to a combined naval and military force on the 14th April 1852, and when peace was declared, all Pegu and Arakan were retained by the British.

British Burma may be geographically divided into five portions, viz., (1) *Arakan*, stretching from the Naf estuary, which separates the province from Chittagong, to Cape Negrais, and consisting of a comparatively narrow strip of country between the sea and a high mountain chain; (2) *Pegu*, the valley of the Irawadi, which, divided from the Sitang valley by the Pegu Yoma range, unites with it in its southern portion; to the eastward is the chain of hills which forms the watershed between the Sitang and the Salwin rivers, and on the west the Anoukpek-toung-myeng, literally, the high western range of mountains, sometimes called the Arakan Yoma range; (3) the valley of the *Salwin*; and (4) *Tenasserim*, a narrow strip, like Arakan, reaching down to the Pakchan stream in 9° 2' N. lat., and separated from Siam by a lofty chain of hills running from north to south nearly parallel to the coast, at a distance of from 30 to 40 miles inland, but approaching nearer to the sea at its southern extremity; (5) The numerous islands off the Tenasserim coast, known as the Mergui Archipelago.

For administrative functions it is arranged as the Commissionerships of Arakan, Pegu, and Tenasserim, all under a Chief Commissioner since the 31st January 1862. The principal towns are,—Rangoon, Moulmein, Prome, Bassein, Akyab, Henzada, and Tavoy, with the military cantonments of Thayat-myo and Tounghoo. Some of the districts have a very scanty population; in 1872 only 6 to the square mile in the Mergui and

Salwin districts, 7 in that of Ramree, 10, 14, 15, and 16 in those of Tavoy, Tounghoo, Sandoway, and Amherst respectively, and in Myan Oung, the most populous, 115. Of the entire population, 2,447,831 were of the Buddhist religion, 99,816 Mahomedans, 52,299 Christians, and 36,658 Hindus.

The country has long been known to the people of India as one of the *Savarna Bhumi*, which Europeans render the Golden Chersonese, and applied to the delta of the Irawadi. The *Irawadi* and *Sitang* valleys unite towards their mouth to form an extensive plain, stretching from Cape Negrais to Martaban. It is annually inundated, but is the most productive part of the whole province, and a canal connects the Pegu and Sitang rivers. The Irawadi is navigable for river steamers as far as Bhamo, 600 miles from the coast. The *Ilaing* or *Rangoon* river rises close to Prome, and, when passing Rangoon, it is joined by the Pegu and the *Pu-zwon-doung* rivers coming from the N.E. and the E. The two latter rivers rise close together in the Yoma range, about 58 miles above the town of Pegu, and they communicate by several channels with the principal delta branch of the Irawadi. The *Salwin* is a great river, but, owing to numerous rapids and rocks, it is only navigable by boats for 100 miles from its two mouths. Between Talifu and Momien, 600 miles due north of its mouth, it flows a rolling current in a shingle bed 140 yards wide. The *Sitang* river rises far north of British territory, and in the dry season is with difficulty navigated by any boats. Below Shwe-gyeng it receives the river of that name, and finally disembogues into the Gulf of Martaban.

The more prominent and dominant races have been the *Myama* or *Burmese*, the *Ra-kheng* or Arakanese, and the *Mon*, *Mun*, or *Taleng*. The native name, *Ma-ran-ma*, *M'ran-ma*, whence the softened modern *M'yan-na*, *M'ya-ma*, is the source of the European corruption *Burma*. The Arakan people are of the same race as the Burmese, and the territory was long under the Burmese rule. In the 16th century, Arakanese dominion extended to Chittagong and the Megna river, and the 17th century saw there several adventurers from Europe. Sebastian Gonzales established himself at Sandiva (Sandwip), and was for years a terror to the country, till crushed with the help of the Dutch. The *Ramana* or *Ramaniya* territory was held by the *Mon*, *Mun*, or *Taleng*, whose districts were *Tha-htun*, *Pegu*, and *Martaban*. It was founded several hundred years B.C. by emigrants from Coromandel. *Tha-htun* is now ten miles from the sea-shore. It was the *Sobana* Emporium of Ptolemy. Pegu city was founded by emigrants from *Tha-htun*, A.D. 573, and Martaban three years later.

In Arakan and in the basin of the Irawadi are other tribes of the same stock with the Burman, and their languages are in their present form so much akin to it, that they may be almost considered as forming, with Burman, dialects of one tongue. The Burmese is monosyllabic, and has no letter corresponding to *f* or *v*, and no hissing sibilant *s*. The Burmese language is spoken in Arakan, in the valleys of the Irawadi and Sitang, and in Tenasserim to the south of Tavoy.

The Burman people occupy the lower part of the basin of the Irawadi above Pegu, with the southern parts of the upper basin and the valley

of the river beyond, as far as Ba-mo. They are also found in the delta, but their progress there has been comparatively recent, and the prior inhabitants still form the greater majority.

Burma has the Tai or Shan on the east, the Malay on the south, Hindu and Mahomedan races on the west, and the Tartar and Chinese on the north. Within these boundaries are many tribes, with several synonyms, but nearly all may be referred to four great families,—the Mon or Talaing, the Burman, the Karen, and the Shan.

A. *Mon*.

B. *Burman*, viz. Burman, Rakhui, Mug, Kanyan, Tounghuer, Tavoyer, Yau or Yo, Yebain, Pyu, Kado, Danu.

C. *Karen*—

a. Sgau tribes, viz. Sgau, Mau-ne-pgha, Paku, We wa.

b. Bghai tribes, viz. Tunin, Bghai, Pant Bghai, Lay-May, Manu or Manau, Karen-ni or Red Karen.

c. Pwo tribes, viz. Pwo, Shoung, Ka or Kay, Ta-ru or Ku ta, Mo-pgha, Ha-shwie, Tounghu, Khyin.

d. Shan Karen, viz. Yen or Yein, Yen-seik, Ying-baw, Pandung, Toun-yo, Black Karen.

e. Miscellaneous tribes, viz. Ka-khyen or Kaku, Ka-mi or Ku-mi, Kyau, Kun, Sak, Mru, Shendu, Selung.

D. *Shan Tribes*, viz. Shan or Tai, Lao or Lau, or Lawa or Wa, Paloung or Paloa, and Phwon or Mwoon.

There are numerous Shan states far to the north-east, but they generally owe fealty to the Burmese monarch.

Burmans march on the north with rude tribes of their own family, collectively termed *Singpho*, who occupy the Upper Irawadi. On the extreme north, the linguistic boundaries of the *Singpho* are unknown.

Lau, a wild tribe only known under the generic *Lau*, termed *Kha-nung*, occupy the mountains to the north-east of the *Kham-ti*, apparently in the upper part of the *Mi-li* or *Nam-Kia*. They are interspersed between the *Kham-ti* and the *Mung-fan*, the latter appearing to belong to the Tibetan family (*Si-fan* or *Kham-pa*). The *Kha-nung* may form a link between the *Kham-pa* and the *Singpho* or Burman families.

Shendu, *Shindu* or *Shandu*, occupy all the country watered by the *Koladyn* and *Mee*, as far down as the *Sulla Kheoung*, but north of the *Sulla Kheoung* they are not tributary to the British.

Khon villages are spread from below the *Sulla Kheoung* to *Teinway*; their villages are few, and they also pay no tribute to the British.

Kumi or *Khwa-mi* occupy all the country watered by the *Koladyn* as far down as the *Koladyn Thannah*, also both banks of the *Mee* and *Samee Kheoung*, and both banks of the *Pee* and the *Yeo* as far as *Khoong-choo*, east and north-east of *Koladyn*, and the country watered by the *Pee* and *Yeo* west of the *Koladyn*.

Mru occupy from *Koladyn Thannah* as far as *Ralla*, and eastward to *Mahamomie* and *Old Arakan* south-east, and both banks of *Myoo* from *Rasudong* northwards. They do not exclusively occupy the whole of that tract of country, their villages being interspersed with those of the *Arakanese*: they are, correctly speaking, wild people rather than hill-people. Some families live with the *Kumi* on the lower part of the *Mee* and *Pee* streams, and also on the *Yeo*. They also inhabit the hills on both banks of the *Myoo*

river in the western part of the district from *Rasudong* northwards to *Sugarloaf hill*. In this extreme north-west part of the district, there are some wild people called *Mroong*, living among the *Mru*, but there is no appreciable difference in their manners, customs, and appearance, from those of the *Mru*.

The *Mroong* in the upper basin of the *Mayu*, and towards the hill frontier of *Chittagong*, are a colony imported from the *Bodo* country by the kings of *Arakan*, at the period when their conquests extended far up *Eastern Bengal*.

Kyen occupy the whole of the large hilly tract of country east of the river *Semru*, in fact, all the hills east of the district, and dividing it from *Independent Burma* and *Khyouk Phyo*. They are the most numerous of the hill tribes. Some of their nearer villages pay tribute, but those more remote are independent. All the *Kyen* women tattoo their faces.

Anoo is a small hill tribe of four villages, living on the *Paroon Kheoung*, a little above *Tulukmee*. They differ little from the *Kumi*. All the tribes have separate clans, at constant warfare with each other.

Burma, Siam, and Tonkin received their first culture from India, along with Buddhism; and their ancient buildings all bear the stamp of Indian origin and Indian taste of a post-Christian age. Siam has in recent times added Chinese methods of improvement to the Indian ones, and Tonkin owes mainly from China.

About five-sixths of the population are Buddhists, the remainder Christians, Mahomedans, Hindus. Every Buddhist Burmese must once in his life enter a *kyoung* or monastery, even if only for a few days, as a monk. The procession to the monastery is gay, and he there undertakes the ten negation commandments, not to kill or steal or indulge in unlawful passion, nor speak falsely, nor drink intoxicating liquors, nor eat after mid-day, dance, sing, or play instrument, paint the face, stand in high places, or touch gold or silver.

The Burmese are of the *Himayana* sect of the followers of Buddha, whom they call *Godama*, and they have great figures of *Godama* in every pagoda. They believe in the presence of a spirit 'La' in every animal, plant, or thing, and they adhere to a *Lent*, *Wa*, from the full moon (*wa-tso*) of July to that of (*tha-ding-ynot*) October, and they have a rosary of 108 beads. The *Leip-bya*, literally 'butterfly,' is the soul, the psyche of the Greeks, the life, the perceptive principle. They have spirits of kinds called *Nat*, and demons called *Beloo*; have witch-finders; and believe in astrology, the evil eye, and philtres. Every *Mon* village has a *Nat*; and a Burmese king dying is said to ascend to the *Nat* village (*Nat yua-taan-thee*). With all the dead, a piece of gold is put into the mouth as ferry toll, *ka-dö-akü*. The great *Shwe-Dagong Po-yah* pagoda was erected B.C. 585. Its height is 372 feet.

Besides the *Wa* or *Lent*, their religious annual festivals are the *Ko-daw-ba*, or *Beg-pardon day*; the *Ta-wa-dein-tha*, relating to the life of Buddha; and the *Water Festival*, *Shin-oo-pa-ga*, when little saucer-shaped lamps are consigned to the river at night. Their favourite religious story is the *Way-than-da-ra*, on the former existence of Buddha. Their everyday amusements are the *pooey drama*, the puppet or marionettes, 2 to 3 feet high, music,

boat and horse racing, football, boxing, wrestling, gambling, cock-fighting. The country is wealthy, and their aversion to regular labour is extreme. Notwithstanding this, the total trade in 1870 amounted to £10,263,000, increased in 1880 to £22,222,000. The incidence of taxation on the population of 3,736,771 is Rs. 6·3 per head. So little is this felt, that every family in Burma on the average spends £12 yearly on jewellery and imported luxuries. Bullion to the extent of a million and a half annually is absorbed in the province, in addition to the great amount spent in charity and amusements.

Their courting time is after 9 p.m., and is called Loo-hyo-tay, thee-achyrin, the time for young men to go about. Polygamy is legal, but is only practised by the wealthy. Living as man and wife, or eating out of the same dish, is a legal marriage. The bridegroom provides a dower. The king has four legitimate wives. Few women have had education. They can hold property, and can divorce themselves from their husbands. The Burman woman's lower garment, Ta-mein, is a narrow cloth of various colours of a pleasing contrast, which descends generally from the waist or from below the arm to the feet. It is made to overlap, and in front is tucked in, but it is so narrow that as the wearer walks the thigh is more or less shown at each step. Women transact the most important business. The filagree work necklace 'Bayet' is a great ornament with the Burmese women. As in Buddhist countries, Burmese women are more nearly the companions and not the slaves of the men. But the Tibeto-Burmans and the cognate Indonesian tribes permit great licence to both sexes prior to marriage, when chastity is not required.

The Burmese tattoo themselves, and, after certain Turks, are perhaps the most civilised men and women who do so. They tattoo their bodies with figures of lions, tigers, beloo or demons, and dragons, also red squares, cabalistic signs or words on their breasts, arms, or backs. The Burmese, Mon, or Ta-laing also tattoo from below the navel to below the knee; the Shan from the navel to the ankle. The Karen-ni have a rising sun on their back as a clan badge, as a mark of manhood. The Kyen tattoo the whole of the face of their women. The inflammation is severe, and death occasionally follows the operations.

The Burmese have no surname. Their single name is prefixed with Moun, meaning brother, or Nga, Koh, and Poh. They and the Karen have the custom of brother-making, called by them Doh, also Thway-thouk. In salutation, the Burmese bend the head three times to the ground, but the Karen, the Shan, and wild tribes of Arakan sniff their relatives. Burmese are skilled workers in metals. A bell at Mengoon is 12 feet high. At Amarapura is a sitting figure of Gaudama, 12 feet high. It was formerly the tutelary saint of Arakan, and was carried off A.D. 1784 by the king of Burma. Amongst the Karen, the Kyee-zee, a large one-headed metal drum, is the standard of wealth. They use as bellows the double-formed forcing air-pump of the Malays. Hla-pet, or pickled tea, prepared from the leaves of the *Elæodendron Persicum*, forms a part of every Burman ceremony. They brew a rice beer called 'kounge.'

The Karen races continue the destructive form

of temporary clearings for cultivation, called Toung-ya, meaning hill clearing or hill garden. Rats, at long intervals of 40 or 50 years, invade the Karen lands in myriads, crossing streams, so that the water is black with them, and devouring every edible thing. From 1870 to 1874 the hill country east of the Sitang was devastated by them, and Government expended £10,000 in relieving the Karens.

The adult dead are burned; those under 15, also such as have died of cholera or smallpox, are buried. Leip-bya, or spirit or soul of the deceased, is believed to dwell in the house until released on the seventh day from the house by the house Nat. The Karen, after cremation, and at an annual festival, collect the unburnt bones, and carry them to the consecrated Ayo-toung, or hill of bones. This is a practice of other tribes.

Independent Burma has the British districts of Assam, Arakan, and Pegu, with the Tipera and Manipur states on the N. and W. and S., with Chinese territory and the Shan states on the E. It extends from lat. 19° 30' to 28° 15' N., and from long. 93° 2' to 100° 40' E., and its area has been estimated at 192,000 square miles; this includes the tributary Shan states. Its rivers are the Irawadi, Kyeng-dweng, which unite in lat. 21° 50' N., the Sitang or Paung-laung (Poungloun), the Salwin, and the Myit-nye. Crawford estimated its population at 22 to the square mile, which would give about 3,090,000; Colonel Yule's estimate in 1855 was 1,200,000; Count Bethelen in 1874, excluding the Shan tribes, reduced it to 700,000; Dr. Hunter in the Imperial Gazetteer, including the Shan, supposed the number to be 4,000,000.

The Burmese seem to have been an intruding race, conquering from north to south, and the boundaries of their kingdom have greatly varied. On their first advance from Arakan, they appear to have conquered the northern part of the ancient kingdom of the Mon, for their capital was for 395 years at Prome. In the era of their greatest stability and prosperity, their capital was at Pagan (probably the place of that name above Ava), from the second to the middle of the 14th century A.D. It was not till the middle of the 16th century A.D. that they succeeded in annexing Pegu. But in the middle of the 18th the Mon threw off the yoke, and in their turn subjugated all Burma for a short period. The Burma capital had moved up the river from Prome to Pagan, from Pagan to Panya, from Panya to Ava, from Ava to Amarapura, and thence, in 1822, to Mandalay, where it now is.

In the Burmese chronological table translated in Crawford's Embassy, are the following events:—

B.C.	
691	Sacred Epoch.—The grand epoch established by An-ja-na, the grandfather of Gautama.
628	Gautama born; 608 began to reign.
589	Gautama became a Buddha.
544	Gautama died, and obtained Nib'han (annihilation).
543	1 The sacred epoch established by king Ajatasat.
94	450 The communications of Gautama reduced to writing in Ceylon.
A.D.	
76	1 The Prome epoch established by king Sumundri.
639	1 The Vulgar epoch established by Puppachan-ra-han.
1364	726 Uch-cha-na-praung, in Chitkaing. But this year Sa-to-mang-bya founded

A.C.		Angwa (Ava), and began to reign; and Chitkaing and Panya were destroyed.
1752	1114	Alaung b'hura (Alompra) began to reign at Mut-cho-bo (Monchabo).
1781	1143	His cousin Paing-ka-cha, commonly called Maung-mang, son of U-pa-ra-ja at Ava, succeeded the same year by his uncle Pa-dem-mang, or Man-ta-ri-kri, son of Alaung-b'hura, and founder of Ama-ra-pura.
1822	1184	Ava re-built and made the capital.

Independent Burma is ruled by a king, with a chief council, the Hlut-dan, composed of four Meng-gyi, four At-ween-wun, and four Wan-da-lay. Burmans differ from the Anamese in being stouter and darker, and in the head being Daya-Polynesian or Turanian oval, and not obtusely ovoid. The head varies greatly, and the coarser forms show a tendency to the Binua contraction of the forehead, rendering the lateral expansion of the forehead very marked. The normal or non-Indianized Burman head appears in many respects to resemble the coarse Sumatran, Javan, Bornean, and Polynesian. This softened Turanian type is decidedly allied to the oblong square and oval Chinese type, and not to the ovoid and orbicular type of the Tibetan, some of the Himalaya-Gangetic, the Anam, and the Celebesian tribes. The Burmans on the west more often resemble the handsome Asianic tribes found in Borneo, some parts of East Indonesia, and Polynesia. Burmans and Malays are somewhat stouter than the Siamese, the average height being probably about 5 feet 2 inches.

The royal family have customs partly Scythic, partly Aryan. They claim descent from the Solar king of Kapilawasta (which was the capital of Sudhodana), and one of the royal titles is 'Ne dwet bhu-yeng,' sun-descended monarch. A peacock is borne on the royal standard, and the figures of a peacock and a hare are painted on the king's throne. The Abeit theik or Water Libation is offered on the accession of a new sovereign. In the royal family, the custom is continued of marriage between half brothers and sisters, and the king's eldest daughter remains unmarried.

Burma has a rich soil, producing in abundance all the cereals, millets, pulses, and oil-seeds, valuable timbers, fibres, cotton, indigo, catechu, lac, caoutchouc, tea, coffee, tobacco, mustard, sugars from the cane, palmyra, betel, yam, sweet potato, and the potato. A tea plant also, supposed to be the *Elæodendron Persicum*, which furnishes the chief ingredient in the Hla-pet or pickled tea. Amongst its mineral products may be named gold, silver, iron, tin, lead, antimony, copper, bismuth. Quarries of marble are worked near Amarapura. Coal has been discovered on the Irrawadi. Ruby mines are very productive; sapphires occur, and garnets; earth-oil is largely obtained from wells. A binoxide of tin occurs in abundance in the streams of the Tavoy and Mergui districts. Lodes have been struck, but they have been found to fine away. Once-washed stream tin yields 70 per cent., and twice-washed 75 per cent., of pure metal. The mercantile products are rice, timber, silk, lacquer ware; and the people are famed for their gold and silver work, and for their wood-carving; rice, of which the yearly product is a million tons, employs, with other articles of produce, 1,200,000 tons of

shipping, of which 1,000,000 tons are British. Of teak wood, 150,000 tons are exported in the year,—86,000 tons to India, and 64,000 tons to Europe, chiefly to Britain. The approximate value of the whole is £1,000,000 sterling. Rice cultivation is chiefly in the valleys and the delta. The amount of the rainfall varies greatly,—in Prome about 43 inches, and at Sandoway 230 inches.

Caoutchouc trees are abundant in the Bhamo and Mogoun districts, estimated at nearly half a million. The galena of Bandwen and Tounghoo mountains is highly argentiferous; precious serpentine also occurs, and the gems of Capelan (Kyat Pen) are famed. The larger wild animals are, elephants, rhinoceros, unicorn and bicornis, hog, tiger, leopard, bear, deer, bovidæ, porpoises.—*Forbes' Burmah; Mason's Burmah; Crawford; Yule's Embassy; Oldham in do., p. 335; Prinsep's Antiquities; Peschel; Aitcheson's Treaties; Bishop Bigandet; Imp. Gaz.*

BURMALA. HIND. A marriage garland.

BURMANN, author of the *Thesaurus Zeylanicus*, published in Holland, which he wrote from the collections made in Ceylon by Dr. Paul Hermann, a medical man in Ceylon. The same collection served Linnæus to write his *Flora Zeylanica*, and it is now in the British Museum. Subsequent to this, in the year 1768, Professor Nicholas Laur. Burmann of Amsterdam, son of the author of the *Flora Zeylanica*, published his *Flora Indica*, with 67 plates, containing figures of 178 plants tolerably executed, but much inferior to those in the *Flora Zeylanica*.—*Wight's Prod. Fl. I. p. 10*, quoted in *Hook. et Th.*

BURMAR. HIND. *Artemisia parviflora*.

BURN, MAJOR-GENERAL, an officer of the Bengal army; while of the rank of major, when Delhi was besieged by the Mahratta army 20,000 strong, under Holkar, with a full train of artillery of 130 guns, kept in constant activity, though the walls were 10 miles in circumference, and much decayed, with a small force he defended it successfully, until the siege was raised by the approach of the grand army. Sir D. Ochterlony, then Resident, remarked that it cannot but reflect the greatest honour on the discipline, courage, and fortitude of British troops in the eyes of all Hindustan, to observe that with a small force they sustained a siege of nine days, repelled an assault, and defended a city 10 miles in circumference, which had ever before been given up at the first appearance of an enemy at its gates. It is commemorated by one of the bastions being named Burn's bastion.—*Oriental Herald*, vol. v.

BURNELL, A. C., of the Madras civil service, who devoted much labour to the elucidation of the history of ancient India; an eminent Sanskrit scholar, a voluminous writer on Hindu law and Sanskrit literature. The Strasburg University honoured him with the title of Doctor.

BURNES. Three brothers of this name served together in India. Sir Alexander Burnes wrote *Travels in Bokhara and History of Cabul*, at which place, along with their youngest brother Charles, he fell on the 2d November 1841. They were natives of Montrose in Scotland, sons of James Burnes, provost of the town, and relatives of the poet Burns.

Sir Alexander entered the Bombay army in 1822; travelled from Bombay through Sind, the

Panjab, and Bokhara to the Caspian Sea, returning by the Persian Gulf, betwixt 1831 and 1833; was despatched on a mission to Kābul in 1837; Assistant to the Envoy from 1838 to 1842; Author of Notice of Hospital for Animals at Surat, *Jl. i. p. 96*; On the Colossal Images in Bamian, *Bl. As. Trans. 1833, ii. p. 563*; Travels into Bokhara, Lond. 1834, 3 vols.; On Female Infanticide in Cutch, Lond. A. S. Trans. 1834, i. p. 193; Cabool, 1837 and 1838, Lond. 1842, 1 vol.; Notice of Sind, Lond. G. S. Trans. 1837, viii. p. 2; Observations on the Maritime Communications of India, as carried on by the Natives, *ibid. 1836, vi. p. 2*; On the Ruins of Puttun Somnath, *Lon. A. S. Trans. v. p. 104*; Account of the Reg Rawan; On the Descendants of Alexander in the Valley of the Oxus; On a Fair for the Indus Trade; On Herat and the Surrounding Countries; Coal Localities near the Indus; Navigation of the Indus; On the State of Turkestan. He also wrote articles on Commerce in Sind and Afghanistan; On the Persian Faction in Kabul; On the Political Power of the Sikhs; On the Political State of Kabul in 1837; On Russia in Central Asia; On the Siah Posh; On the Wool of Kabul and Bokhara. A memoir of his life appeared in the *Bombay Times*, December 1841, *As. Jl. 1842*.

James Burnes, K.H., the elder brother, a medical officer of the Bombay army, author of *A Visit to the Court of Sind.—Dr. Buist's Narrative of Afghanistan*, Bombay, 1843.

BURNOUF, EUGENE, a learned native of France, who devoted much of his life to oriental investigations. As a Sanskrit scholar, in 1840–47 he edited and translated part of the *Bhagavata Purana*. He published in 1844 his *Introduction à l'Histoire du Bouddhisme*. He died in 1851. He was Professor of Sanskrit in the *Collège de France* in 1826, in conjunction with Lassen. He wrote the *Essai sur le Pāli*. He did for Zend and Achæmenian Persian what Jacob Grimm had done for the Teutonic languages. His labours have been continued by Lassen, Haug, Spiegel, Justi, and others. He published a memoir on the cuneiform inscriptions of Hamadan.—*Oriental Linguistic Studies*, p. 176; *Sayce*, i. p. 52.

BURNUS, AR., also written Būrnoos, a hooded cloak, generally made of white woollen stuff, and mostly worn by the people of northern Africa.

BURO. BENG. In Hindi, Bara, large.

Buro-bel, *Jasminum plenum*.
Buro-bet, *Calamus fasciculatus*.
Buro-buhooari, *Cordia latifolia*.
Buro-chali, *Guatteria suberosa*.
Buro-chhoooncha, *Cyperus Iria*.
Buro-chuna, *Vicia sativa*.
Buro-elachi, *Amomum grana paradisi*.
Buro-gachh, *Ficus religiosa*.
Buro-gothoobi, *Mariscus cyperinus*.
Buro-hulkusa, *Leucas cephalotes*.
Buro-jalgantee, *Panicum setigerum*.
Buro-jhauji, *Utricularia stellaris*.
Buro-joan, *Ptychotis ajowan*.
Buro-jubanee, *Trichostylis miliacea*.
Buro-kanoor, *Crinum toxicarium*.
Buro-kerui, *Euphorbia hirta*.
Buro-keshuriya, *Hymenocleste grossa*.
Buro-keshuti, *Adenostemma biocarpum*.
Buro-kokashim, *Blumea lacera*.
Buro-koondo, *Jasminum arborescens*.
Buro-kookoor-chita, *Tetranthera monopetala*.
Buro-kulpa, *Trichodesma Zeylanicum*.
Buro-kungi, *Abutilon graveolens*.
Buro-kut, *Sagittaria obtusifolia*.

Buro-looniya, *Portulaca oleracea*.
Buro-makal, *Trichosanthes bracteata*.
Buro-methi, *Trigonella fœnum-Græcum*.
Buro-munda, *Loranthus longiflorus*.
Buro-musoor, *Ervum lens*.
Buro-neelpudmo, *Nymphaea major*.
Buro-panchoo-lee, *Villarsia Indica*.
Buro-panee-murich, *Polygonum pilosum*.
Buro-pani-nuti, *Poa Chinensis*.
Buro-phootika, *Melastoma Malabathricum*.
Buro-rai, *Sinapis ramosa*.
Buro-ritha, *Sapindus emarginatus*.
Buro-ruktu-kumbul, *Nymphaea rubra*.
Buro-sada-ma-khumshim, *Canavalia leucosperma*.
Buro-shalook, *Nymphaea pubescens*.
Buro-shalpanee, *Flemingia congesta*.
Buro-shama, *Panicum hispidulum*.
Buro-shialkanta, *Argemone Mexicana*.
Buro-shoonthee, *Rottbolla exaltata*.
Buro-shoong, *Bergera Konigii*.
Buro-tugur, *Tabernaemontana plena*.

BURO-BHOOA and Bhooa. HIND. Species of *Bombyx* which feed on the castor-oil plant and *Cocculus acuminatus*. They are shaggy-haired, imitating each other. The former is innocuous, but the hairs of the Bhooa are brittle, and cause intolerable itching, provoking dangerous and even fatal results. If swallowed by goats or buffaloes, it is followed by swelling and inflammation of the bowels. The bhooa is shunned by mynas and other insect-eating birds.

BUROOD, a race in Berar. In 1865 there were 955 of this people in the Oomraoti district.

BUROONDI. SANSK. *Celosia argentea*.

BURR or BARR. Wherever Arabs are met with in tents, they denominate their place of encampment 'Burr,' or wilderness,—the term Sahara, or desert, being more particularly applied to the wilderness of Africa.

BURR. ARAB. *Triticum æstivum*, wheat.

BURRAR, HIND., in Rajputana is an indefinite term for taxation, and is connected with the thing taxed, as ghancem burrar, war tax; garh ginti-burrar, house tax; hal-burrar, plough tax; neauta-burrar, marriage tax, and others, both of old and new standing. The burrar is well understood in Mewar, and is levied on many occasions for the necessities of the prince or the head of a clan.—*Rajasthan*, i. pp. 143, 160.

BURRI. HIND. Wedding gifts; also hand-sowing of seed, also dibbling grain. Gurri, Gulli, and Si are all similarly applied.—*W*.

BURRICK, a fabric manufactured by the Jaguri Hazara from the wool of the Dumba sheep. Qu. Bārik, PERS. fine.

BURRO. HIND. Reed pens.

BURSENAPATI, the title of the chief of the Muttuk branch of the Singpho group, and the people are called Muttuk, Moamerria or Mowamerria. Their country is a short distance from where the Brahmaputra river enters the Assam valley, and they dwell close to the banks, and principally on the southern side.

BURSERACEÆ, a natural order of plants, nearly all natives of tropical climates. About 24 species have been found in S.E. Asia, of the genera *Balsamodendron*, *Boswellia*, *Canarium*, *Garuga*, *Icica*, and *Protium*. They all have an abundance of fragrant resinous juice. *Boswellia serrata* yields olibanum. *Canarium Bengalense*, of this tribe, according to Dr. Roxburgh, exudes an excellent clear amber-coloured resin, not unlike copal. In America, several valuable resins, as elemi, carana, chibow, and two or three kinds

of *tacamahaca*, are afforded by plants of this tribe.—*Royle's Ill. Him. Bot.* p. 177; *Voigt*, p. 149.

BURSINOPETALUM ARBOREUM, *Wight*, var. *macrophyllum*. A large tree of the forests of the Central Provinces of Ceylon, growing at an elevation of 4000 to 7000 feet. *B. tetrandrum*, *Wight*, is another large tree of Ceylon.—*Thw. Zeyl.* i. p. 42.

BURSUNGA. HIND. The leaves of *Bergera Konigii*, used medicinally.

BURTON, R. F., an officer of the Bombay army, in which he rose to the rank of captain, one of the most varied linguists of his day. In 1853, under the name of Haji Abdullah, he visited Medina and Mecca. He led an expedition into Central Africa, and discovered Lake Tanganyika. He visited the Mormons at the Salt Lake. He entered the civil service of Great Britain, and was successively consul of Damascus, at British Guiana, at Cape Coast, and at Trieste. He went on a mission to the king of Dahomey. He made an examination of the land of Midian. He wrote—Goa and the Blue Mountains; Description of Sind, or the Unhappy Valley; Sind and the Races that inhabit the Valley of the Indus; Journey to Mecca; Travels in the Somali Country; The City of the Saints; The Nile Basin; Abeokuta, Zanzibar; Unexplored Syria; The Highlands of Brazil; Battlefields of Paraguay; Ultima Thule; Two Trips to Gorilla Land; Mission to Dahomey.

BURU, a large island in the Eastern Archipelago, being about 200 miles in circumference. The bulk of the inhabitants are a comparatively fair people, very closely resembling the natives of Amboyna; and the only tribe that is likely to be Papuan, is a small community which resides in the neighbourhood of a mountain lake near the centre of the island. This lake was visited by parties from the garrison in 1668, and again in 1710, and their observations are recorded at some length by Valentyn, in his *Beschryvinge Van Oost India*.—*Earl's Papuans*, p. 185.

BURUCH. SINGH. *Chloroxylon Swietenia*, R.

BURUD. MAHR. A caste whose occupation is mat-making, sometimes enumerated among the village servants.

BURUGA. TEL. *Eriodendron anfractuosum*.

BURUNG. MALAY. Any bird.

BURUNGEE. DUKH. *Siphonanthus Indica*; HIND., *Quercus flexuosa*.

BURUT are distinguished from the Kalmuk only by their language. The Mongol, the Kalmuk, and the Burut are a very phlegmatic, good-humoured people; they have all accepted Buddhism, but practise many shaman rites.

BURYA. PERS. Mats.

BURZAL. HIND. *Betula bhojputra*.

BURZUD. PERS. Galbanum.

BUSA-KARELLA. HIND. *Momordica charantia*.

BUSHAN, of Upper Chenab, *Salix alba*.

BUSHIA, a town in the Himalaya, with horses, yaks, sheep, provisions, etc. The people, half nomadic Tartars, inhabit caves fitted up like houses in the cold season, and dwell in tents during the rest of the year. The height of Bushia is 9200.—*Rep. Proceed. Mag. Surv. India*, p. 3.

BUSHIRE or Abu-Shahr, in lat. 29° 0' 15" N., and long. 50° 51' 30" E., a port on the coast of the Persian province of Fars, 225 miles W.S.W. of Shiraz. It is situated at the N. extremity of

a low sandy peninsula, about 11 miles long and 3½ broad. It has a population of about 12,000 souls. Treaties were made with the king of Persia in 1763 and 1841, and the British have a Resident there. The value of the trade amounts to about a million sterling. Its population are mixed Arabs and Persians, with about 100 Armenian merchants. The tribes around Bushire are the bravest on the Persian seaboard, and opposed the British in the war with Persia in 1856. It was captured by the British on the 10th December 1856. Bushire is probably the result of the silting up of a still more ancient harbour about 6 miles from it, where bricks with cuneiform inscriptions are found. Out of the plain near Bushire many vases have been taken, formed of ill-baked clay, and filled with seeds of the tulah plant or mallows, which soon decay when affected by the fresh air. Earthen urns, containing the remains of human bodies, are said to abound on the plain of Bushire.—*MacGregor*, pp. 80–102; *Osceley's Travels*, i. p. 216; *Treaties*, vii. 99, 137.

BUSH-KURD district is looked upon by the natives as a part of the Kohistan, and the Kurds who inhabit it are never spoken of by the term Makrani, or people of Makran; but it is south of the Kohistan, and unquestionably in Makran. It is one uninterrupted and rugged mass of mountains, that afford pasturage for the cattle of the Kurd Baluchi, who depend on the lower countries for grain and other supplies. These people are a tribe of Kurds that have advanced out of Juristan.—*Pottinger's Travels*, pp. 305–6.

BUSH QUAIL. IOWA, HIND. Quails of the genus *Pedicular*.

BUSI. TEL. *Vitex arborea*.

BUSSAHIR or Bashahr, a hill state in the upper course of the Sutlej river, recognised 6th November 1815, at the close of the Nepal war, and in 1862 granted the right of adoption. The inhabitants suffer from goitre, but not so much as in the valleys of the Pabur and Tons; the people in the higher valleys do not suffer so much as those in low situations. The natives of Bussahir, Sookeyt Munde, and Kooloo have sallow complexions, and seem all of the same race.

BUSSEI KHEL, a tribe on the N.W. borders of British India. The Afridi lie between Peshawur and Kohat; they are fierce, factious, and strong, and, with the Bungush, the Jewaki, Bari, Bussi Khel, and Busti Khel, as also the Sipah and Buzoti, are more or less independent.

BUSSO. JAP. A Buddhist priest or talapoin.

BUSSY, an eminent commander of the French in India, from A.D. 1751. He threw all his influence in support of the Nizam of the Dekhan, was present at the battle of Ambur, which the French gained and Anwar-ud-Din fell, and he attacked Gingee successfully. He was attached to Muzaffar Jung, but after his death he appointed Salabut Jung to be subahdar of the Dekhan, and accompanied him to Aurangabad. He subsequently defeated the Peshwa, and was able to obtain for Dupleix the title of Nawab of the Carnatic. He subsequently obtained the cession of four provinces near Aurangabad, then of the four Circars. He was afterwards dismissed the Hyderabad service. He then returned to the Dekhan, and joined Lally at Arcot, and was taken prisoner at the battle of Wandiwash.—*Malleson, French in India*.

BUSTAR, a district and dependency in Central

India, surrounded by the Teling in the south, Khond and Mari Gond on the east, and Hindus to the north. It lies westward of the state of Jeypore, and has the Godavery for its southern boundary. In length it is about 170 miles, and in breadth about 120, with an area of 18,000 square miles. It is a country of plains and plateaux, lofty mountains and fertile valleys, rivers and forests, with a population of about 200,000.

The raja claims to be a Rajput, and the family add Singh to their name. The chief town is Jugdulpur. Till past the middle of the 19th century, human sacrifices to Deoteshwari Devi were of frequent occurrence, and at certain festivals as many as a thousand sheep and buffaloes would be sacrificed to two goddesses. The races consist of the hunting and fishing *Tigara* or *Purja*, who will eat anything, from beef and mutton down to rats and snakes. The *Gudwa*, who subsist by cultivation chiefly, seem much given to dancing and amusement. On holidays, men and women join in dancing to the music of a fife and drum. A ring is formed by all joining hands; the company circles round and round, relieved now and then by mighty hops to the centre and back. This finished, a man steps forward, singles out one of the other sex, and banter her about her ugliness, and so forth, and the woman retorts. The *Somdee* deal extensively in mahwa arrack. The *Maria* are numerous; inhabit the densest jungles, avoid all contact with strangers, and are so timid that they flee to the hills on the least alarm. They are strong and agile, very expert in the use of the bow, and are a cheerful, light-hearted race. The women tattoo themselves from head to foot. The clothing of the *Maria* decreases in quantity in direct proportion to the increase of the distance of their abodes from civilisation. They are very inquisitive, sharp observers, apt to learn, and remarkable for their truthfulness and honesty. The savage race in the Beila hills have leaf aprons.

BUSTARD. European and Indian bustard.

Beet-miaka, . . . CAN.	Jangli kaboot, . . . HIND.
Ostarde, Outarde, Hout-	Starda commune, . . . Ir.
arde, Bistarde, . . . FR.	Cowdun, Ahu-buru, PERS.
Trapp, Trappe, Trap-	Jars, . . . "
gans, . . . GER.	Gustard, . . . SCOTH.
Ackentrappe, . . . "	Abu-tarda, . . . SP.
Der Grosse Trappe, . . . "	Nil-Naray, . . . TAM.

It is the *Otis tarda*, the great bustard of Europe, to which the English name bustard is usually given; but in the classifications of zoologists the family *Otididae* has three genera, the *Houbara*, *Eupodotis*, and *Sypheotides*, some species of the last being usually termed florikin.

Eupodotis Edwardsii, Gray. Indian bustard.

<i>Otis nigriceps</i> , Vig.	<i>Otis lucionensis</i> , Vieill. ?
Tokdar, Burra, . . . HIND.	Gurrayin of Hurriana.
Sobun Guginbher, . . . "	Bat-myaka, . . . TEL.

This noble bird is $4\frac{1}{2}$ to 5 feet long, and extent 8 feet. It weighs 26 to 28 lbs. It is not known in Bengal, Behar, or the Malabar coast, but seeks the open grassy plains of India. It is becoming very scarce in the cultivated country, but is said to be still abundant in Rajputana. Their usual food are insects, but they eat reptiles and fruits. They are polygamous, and at the breeding season the male struts about on some eminence, puffing out the feathers of the neck and throat.

O. lucionensis of China may be a distinct species.

Other species are *E. nubra*, Ruppell; *E. ludwigi*, Rupp.; *E. Caffra*, Licht; *E. Denhami*, Children; *E. Arabs*, L.; and *E. Kori*, Burchell. A species very closely allied to *E. Edwardsii* is the *Otis Australis*, Gray, the wild turkey of Australia.

Houbara Macqueenii, Gray, *Houbara bustard*.

Otis marmorata, Gray.

Dugdoor, . . . AFGH. | Tilaor, . . . HIND.
Hurriana florikin, . . . ENG. | Obarra, . . . W. PANJ.
This bird has a beautifully crested head, is 25 to 30 inches long, and extended is 4 feet. It weighs $3\frac{1}{2}$ to $3\frac{3}{4}$ lbs. It is supposed that both the male and the female assume the ruff in the breeding season. It is found throughout the plains of the Panjab and Upper Sind, where it is much hawked with the cherrug falcon, *Falco sacer*. It also occurs from Delhi to Afghanistan, in Mesopotamia, in Europe, and England. It occasionally baffles the hawk by ejecting on it a horribly stinking fluid, which besmears and soils the hawk's plumage. *Houbara undulata* occurs in N. Africa and Arabia, and visits Spain.

Sypheotides Bengalensis, Gmelin.

Otis deliciosa, Gray. | *Otis Himalayana*, Vigors.
Charas, charaj, charaz, H. | Dabar of Nepal Terai.

The Bengal florikin is about 24 to 27 inches long, and 44 to 47 inches extended. In the breeding dress of the male, the whole head, which is crested, also the neck, breast, and lower parts, with the thigh coverts, are deep glossy black. It is found from Lower Bengal to all along the foot of the Himalaya. The sexes live apart, at no great distance from each other. They eat insects and sprouts of plants. It is shy and wary.

Sypheotides auritus, Latham, lesser florikin.

Otis fulva, Sykes.

Khar titr of Bhils.	Lakh, . . . HIND.
Kan-noul, . . . CAN.	Tan-mohr, . . . MAHR.
Charaz, charas, . . . DUKEH.	Warragu Koli, . . . TAM.
Chulla charas, . . . "	Niala-nimili, . . . TEL.

The Canarese, Mahratta, and Telugu names mean 'ground peafowl.' In breeding plumage, the male, in head, neck, ear-tufts, medial wing coverts, and the whole lower plumage, is deep black; the chin alone is white. It is 18 or 19 inches long, and weighs 16 or 18 oz. Dr. Jerdon considers the black and common grey florikin to be identical, but in the plumage of different seasons; it is found throughout India, from the Himalaya to the south. It eats insects and beetles. It is hawked by the baz, the laggar, the shahin, and wokhab.

Otis tetrax, L., the *Tetrax campestris*, the small bustard of Europe, is said to have been found in the Peshawur valley, and occurs in Central and Western Asia and North Africa.

The following are bustards of Africa, some of which spread into Arabia, viz. *O. rhaad*, Shaw; *O. caeruleus*, Vieill.; *O. scolopacea*, Temm.; *O. afra*, L.; *O. afroides*, S.; *O. Senegalensis*, Vieill.; *O. melanogaster*, Rupp.

The Australian bustard is the *O. Australis*; in the pairing season, the attitudinizing of the male is extremely singular.—Ainslie, *Mat. Med.*; Eng. Cyc.; Jerdon, *Birds*. See Birds.

BUSTI KHEL, an Afghan tribe. See Bussi.

BUT, a manner of pronouncing and writing the name of Buddha, also the Bhot or Bot race.

BUT. PERS. An idol. In the Hindi and

several Indian tongues, Bu or But is a spirit, generally an evil spirit.

But-Faroshi, a tax or fine levied to defray the cost of celebrating the worship of the village deity.

But-Khana, a temple, an idol-house; by some supposed to be the origin of the English word pagoda, also supposed to be from pai-guda.

BUT, also Butkalay. BENG. *Cicer arietinum*.

BUTA. HIND. Head of the Indian corn, the Zea mays. Buta-dar, a diaper fabric. Also any shrub or plant; *Crotalaria burhia*; *Cheti-buta*, *Abelia triflora*. Buta kara-mee, TEL., *Nauclea parvifolia*.

BUTAI-MISWAK, HIND., *Astragalus multiceps*.

BUTAIRI, or Ailri, HIND., *Rhus semialata*.

BUTALLA-POTAKA. TEL. Senna.

BUTALLI MARAM. TAM. *Givottia rottleri-formis*.

BUTANA. HIND. Common pea.

BUTANI, a clan of the Baluch Maghazzi tribe, which has been located in Kachi for a long time. The Maghazzi are subdivided into four principal families or clans, of which the Butani of Jell are the most illustrious, and give the chief or sirdar to the whole. They boast of being able to muster 2000 fighting men, and between them and the Rind a blood-feud long existed. The Maghazzi and Rind are alike addicted to the use of ardent spirits, opium, and bhang. The Butani dwelling in the Dehra Ismail Khan district, were a robber tribe until they became British subjects.

BUTAN KOOSHUM. SANSK. *Anisomeles Malabarica*.

BUTASHIA. HIND. Sugar cakes.

BUTAYAT. BURM. *Egycceras fragrans*, Kon.

BUTCHER ISLAND, 3½ miles from the shore in Bombay harbour. Its Hindu name is Depadevi, or the island of the gods, Holy Island.

BUTEA FRONDOSA. Roxb. Bastard teak.

Erythrina monosperma, Lam.

Pulasa; Kinaka, . . BENG.	Chuchra Pla, . . PANJ.
Pouk-pin; Pouk-	Kinsuka, . . . SANSK.
nway, BURM.	Kalu-keia, . . . SINGH.
Mootr, Ch'hiul, . . CAN.	Porasa maram, . . TAM.
Pulas, ENG.	Moduga chettu, . . TEL.
Parasa; Dhak, . . HIND.	Kimsukamu, . . . "

This tree grows in most parts of British India and Ceylon. It covered the battlefield on which Clive defeated Suraj-ud-Dowla, which in history is known as the battle of Plassey. When left to nature it attains a good size, but it is much cut for firewood, and its roots cut for fibre to make ropes with, and it is generally seen gnarled and bushy. In April its large clusters of deep orange-coloured flowers, called teso, also kisu, attract attention. An infusion of the flowers of this and also of *B. superba*, dye cotton, previously prepared with alum, a bright yellow, which may be changed by an alkali into deep reddish orange. The lac insect is frequently found on the smaller branches. Its wood resembles teak in appearance, and is used for gunpowder charcoal, well curbs, and for building purposes. The leaves are sold to shopkeepers in the bazars for the purpose of wrapping small articles in them instead of paper. From the bark of the root a very strong fibre is prepared. The root is cut into lengths of from two to four feet, and the bark peeled off, dried, and beaten by handfuls with a wooden mallet. It is used for caulking boats, and making ropes

and cables for anchoring boats. The flowers are offered by the Ho to their god Desauli Bonga. Its gum, of a deep red colour, is known in commerce as the Butea kino and Indian kino, the Palas gond or Dhak ka gond.

BUTEA SUPERBA. Roxb. iii. 267.

Tige moduga, . . TEL.	Baranki chettu, . . TEL.
Tivva moduga, . . . "	

An immense creeper with flowers resembling those of *B. frondosa*. It grows on the mountains of Coromandel, in the Circars, the Kheri jungle, and in the Dehra Doon, and is not uncommon in the provinces of Tavoy and Mergui. It yields the same kind of gum as *B. frondosa*.

BUTEONINÆ, the buzzard sub-family of birds of the order Raptores, or birds of prey, comprises *Archibuteo hemiptilopus* of Tibet and the Himalaya; *Buteo pygmaeus* of Tenasserim; *B. rufinus* of India and N. Africa, and *B. vulgaris*, the common buzzard of Europe, N. Africa, Asia Minor, higher mountains of India, common in the W. Himalaya, rare in the Neilgherries, and replaced on the plains by *B. canescens*; rare, and to the northward and far west only, in America; mostly migratory in Scandinavia. *B. Bacha*, *Franklin*, and *B. Melanotis*, *Jerd.*, are synonyms of *Spilornis cheela*, *Daud.*

BUTHUS AFER, *Linn.*, the great black scorpion of Ceylon; is as large as a little crayfish; its sting occasions a little inflammation.

BUTI. HIND. A vegetable; flower.

Awani buti, Ballota limbata.
Buti ka mockka, Boletus ignarius.
Baggi buti, Stachys parviflora.
Dandi buti, Cleome ruta.
Faril buti, Farselia Edgeworthii.
Ganda buti, Euphorbia helioscopia.
Gandi buti, Glinus latoides.
Kauri buti, Trichodesma Indica; Solanum gracilipes.
Khare buti, Oreoseris lanuginosa.
Mundi buti, Sphaeranthus hirtus.
Pili buti, Abutilon Indicum.
Pipat buti, Heliotropium ramosissimum.
Popat buti, H. Europæum.
Resham buti, Berthelotia lanceolata.
San buti, Cassia obovata.
Tappal buti, Crozophora tinctoria.
Wadi buti, Ajuga bracteata.

BUTIA, a name comprising the Little Tibetans, the natives of Ladakh, the Tibetans of Tibet proper, and the people of Bhutan. See Bhot Bhutan; Bulti; Ladakh; Tibet.

BUTIRSACHA. MALAY. Glass beads.

BUTKUS. MAL. Elæodendron Roxburghii.

BUT MOOGRA. DUKH. Jasminum sambac.

BUTCERA RUBUS, the Curuminga of the Singhaless. A beetle which penetrates the trunk of the cocoanut tree near the ground, and there deposits its eggs; and its grubs, when hatched, eat their way upwards through the centre of the tree to the top, where they pierce the young leaf-buds and do incredible damage.—*Tennent's Ceylon*.

BUTOMUS, a genus of plants of the ord. Butomaceæ. Roxburgh (ii. 315) describes *B. lanceolatus* of India. *B. umbellatus*, the Kiai-tsau of the Chinese, is a waterside plant of China and Europe. Its rhizomes, formerly eaten, are now used medicinally.

BUT PESH. HIND. *Aplotaxis gossypina*.

BUT SHUR. HIND. *Ephedra Gerardiana*.

BUT-SU-DA-NA. JAPAN. A Buddhist altar-shelf.

BUTTER.

Niu-nai-yu; Su-yu, CHIN.	Manik sapi; Man-	
Smor, DAN.	tega, MAL.	
Boter, DUT.	Maslo, POL.	
Beurre, FR.	Manteiga, PORT.	
Karra; Maaka;	Masslo korowe, RUS.	
Mackan, HIND.	Manteca, SP.	
Burro; Butiro, IT.	Venne, TAM.	
Makhan, MAHR.	Ma-sz-ko-yu, TARTAR.	
Butyrum, LAT.	Venna, TEL.	

Butter is one of the components of milk, the others being curd or casein, a kind of sugar, and certain salts. The lighter matters suspended in milk, when it is allowed to stand, separate in the form of cream, which can be further separated, by churning, into butter and butter milk. The yield of cream is increased by dropping into the milk a small piece of zinc. Butter is naturally of a yellow colour, which is deepened when the cows feed in rich pastures, but it is often artificially heightened by annatto and safflower. Karra, or fresh butter, is seldom used by the natives of India. It is generally kept till it turns rancid, and then clarified by repeated boiling. This is called roughan in Persia, and ghi in India. The ordinary drink of the Tartars is kumys, a spirit made of mares' milk. They pour the milk into a large leathern vessel, and, when they have got a considerable quantity, beat it till it begins to ferment like new wine. When it becomes quite sour, they beat it again violently, and then draw off the buttery part. The fermented whey makes a brisk sort of liquor, with an agreeable almond flavour, very intoxicating to those not much accustomed to it. The Tartars also make from goats' milk a kind of butter, which they boil and keep for winter use in goats' skins, and though they put no salt in it, it never spoils. It is seemingly ghi. After they have taken off the butter, they boil the curd again to make cheese, which they dry in the sun, and which is as hard as iron. These cheeses they put into sacks for the winter store, and when the supply of milk becomes scanty, they put this hard, sour curd into a leathern vessel, pour hot water upon it, and beat it till it liquefies; and with this acid drink they have to content themselves during the time of year so severely felt by pastoral nations. The Tartars live chiefly on their flocks and the produce of the chase. In China the milk of every domesticated animal has been employed for making cream and butter. The milk from the wild cow is said to be the best. Ghi, or clarified butter, is called T'i-hu.—*Smith*, 45; *Huc's Christianity*, i. p. 209; *Toml.*; *McCull*.

BUTTER, DR. D., a Bengal medical officer who wrote on the Topography and Statistics of Oudh, Calcutta, 1839; On Public Health in India; Planting of Trees along the Himalayas, *Bl. Med. and Phys. Trans.*, Calcutta Government Gazette, and *As. J.*, 1829, xxvii.; On the Preparation of Opium for the Chinese Market in the Behar and Benares Agencies, *Bl. As. Trans.*, 1836, v. 165.

BUTTERFLY.

Let-pya, BURM.	Parwana, HIND.
Papillon, FR.	Parfalla, IT.
Schmetterling, GER.	Mariposa, SP.

Butterflies are very numerous in the S. and E. of Asia, and many of them very beautiful. They are classed by entomologists in the insect order Lepidoptera. The largest and most gaudy of Ceylon is the great black and yellow butterfly, the *Ornithoptera danius*, *Gray*. Its upper wings,

which often measure six inches across, are of a deep velvet black. Its caterpillar feeds on the *Aristolochia* and betel leaf, but the butterfly on the heliotrope. *Papilio polymnestor*, the black and blue butterfly, feeds on the ruddy flowers of the hibiscus or the dark-green foliage of the citrus. *Papilio Hector* has crimson spots on the black velvet of the inferior wings. When examining the Lachen valley, Dr. Hooker found the caterpillar of the swallow-tail butterfly (*Papilio machaon*) common, feeding on umbelliferous plants, as in England; and a sphynx (like *S. euphorbiæ*) was devouring the euphorbias; the English *Cynthia cardui* (painted-lady butterfly) was common, as were sulphurs, marbles, *Pontia* (whites), blues, and *Thecla*, of British aspect but foreign species. Amongst these, tropical forms were rare, except one fine black swallow-tail. *Kallima inachis* of India and *K. paralekta* of the Malay Archipelago furnish wonderful examples of protective resemblance to dead or decaying leaves, every one of them being some shade of ash or brown or ochre. The *Ornithoptera paseidon* of the Aru Islands, is the bird-winged butterfly. In the western districts of Java are the calliper butterfly, *Charaxes kadeni*; of birds, the elegant green and yellow trogon, *Harpicetes Reinwardti*; the gorgeous little minivet fly-catcher, *Pericocotus miniatius*, which looks like a flame of fire among the bushes; and the rare black and crimson oriole, *Analcipus sanguinolentus*. The *Papilio arjuna* has its wings covered with grains of golden green.—*Wallace*, p. 118.

BUTTER MILK.

Dhai, HIND.	Salla, also Majiga, TEL.
Moroo, TAM.	

Butter milk forms an ingredient in many native recipes; it is used by chucklers for softening leather.—*Rohde*, MSS.

BUTTER-NUTS. See Caryocar.

BUTTERS, VEGETABLE. This name is given to the concrete oil of certain vegetables, from its resemblance to the butter obtained from the milk of animals. The term is also occasionally, but improperly, applied to some vegetable products which are entirely of a waxy nature, such as the wax of *Myrica cerifera*. The name is likewise bestowed in Siberia on certain algæ, species of the genus *Nostoe*, such as *N. pruniforne*. The most important vegetable butters are produced by species of *Bassia* and certain palms.

Butter of Cacao, from *Theobroma cacao*. 1000 parts of the seed yield 300 parts of a concrete oil or butter, of a most agreeable flavour.

Butter of Cinnamon, from *Cinnamomum verum*, or *C. Zeylanicum*. By strong decoction the fruit yields a concrete oil, also called cinnamon wax, used for candles, and which exhales while burning a most fragrant odour.

Butter of Nutmeg, from *Myristica moschata*, is brought from the Moluccas, of two kinds, and is obtained by bruising the nutmegs into a paste, which is compressed in bags between hot metallic plates.

Butter of Coconut, from the *Cocos nucifera*, is prepared by rasping the pulp of fresh ripe coconut, adding a little hot water, squeezing and boiling the milky juice until the water has evaporated, and filtering through paper. This oil separates into two portions, the one fluid and limpid, the other a solid concrete substance of a pure white

colour, which, in the shade, remains unliquided at all temperatures.

Butter of Palm-oil, from *Elæis Guineensis*, a native of Africa and America. It is much esteemed in Europe for unguents, and has been lately recommended for culinary purposes.

Butter and Tallow Tree, the *Pentadesma butyracea*, Br., of Sierra Leone, is so named from the yellow, greasy juice which copiously flows from it when cut. It is mixed by the Negroes with their food.

Kawan Solid Oil, of Java and Singapore, is obtained from an undetermined species of *Bassia*.

Shea Butter is from the seeds of *Bassia Parkii*, Don, growing in W. Africa; likely to become valuable for the manufacture of candles and soap.

Galam Butter, from *Bassia butyracea*, Fulwa or Phulwara, also Choorie, of Nepal, Almora, and Kamaon in Northern India. In the province of Dotee this is so abundant, that the oil is cheaper than, and is used to adulterate, ghi. It is white and solid, fusible at 120°, and exhibits little tendency to become rancid when kept.

Bassia latifolia Oil separates into two portions,—one on the surface, fluid, and of a pistacio green colour; the other of a brownish green, and almost solid.

Bassia longifolia or Illupu Oil. One sample separated into two portions,—the upper, fluid, of a pale oil-green in colour, and the lower greenish white, and of the consistence of ghi. Another separated into three portions, the uppermost a golden yellow, and fluid; the middle, yellowish white, solid, and floating in the upper; and the lowest, solid, and brown in colour. A third was of the consistence of ordinary ghi. A specimen, almost solid, from Tanjore, was of a light golden-yellow colour.

Chinese Vegetable Butter from *Stillingia sebifera* is much in use in China. The number of these trees in the province of Che-kiang is immense.

Indian Vegetable Butter, Piney Butter, or Doodpadā Solid Oil, is from the *Vateria Indica* of the western coast of India. It is white or yellowish white, of the consistence of hard salt butter, and in the shade remains always solid. It is used for lamps principally, but is very suitable for soaps and candles. It is prepared by cleaning the seeds, then roasting and grinding them into a mass. To five seers of seed add twelve seers of water, and boil until the oil rises to the surface. Remove the oil, stir the contents of the vessel, and allow it to stand until the following day, when more oil will be observed on the surface, which may be collected, and the process repeated.

Carap or Carab Vegetable Butter, from *Carapa Guianensis*, a large tree in Trinidad and British Guiana.

Butter of the Great Macaw Tree, from *Acrcomia fusiformis*.

Japan Wax is from *Rhus succedaneum*.

Almond Butter, from *Amygdalus communis*.

Cocum Butter, from *Garcinia purpurea* seeds, which produce solid oil.

Gamboge Butter, Mukke Tylum, TAM., *Arsana Ghoorhy yennai*, CAN., is a product of the *Garcinia pictoria*, Roxb., which grows abundantly in Mysore and the western jungles. Gamboge butters are solid, and of a deep leek-green colour. The oil is procured by pounding the seed in a stone mortar, and boiling the mass until the

butter or oil rise to the surface. 2½ measures of seed yield one seer of butter; it is sold at the rate of 1½ annas per seer of Rs. 24, in the Nuggur division of Mysore, and is used as a lamp oil and as ghi.

Sterculia foetida Oil, Coodiray yennai, or Coodira pujan yennai, TAM., is thick at all seasons of the year, and is obtainable probably in large quantities in the Nalla Malla and Yella Malla forests of the Peninsula of India.

Butter of Laurel, *Laurus nobilis*.

Solid Oils are obtained from some *Dipterocarpi* in the Indian Archipelago.

Solid Oil of the Horse-eyes and Cacoons of Jamaica, *Fevillea scandens*, is white and hard.

Mijo or Japan Butter, from *Dolichos soja*.

Solid Oil, from *Myristica (Virola) sebifera* of British Guiana.

Solid Oil from the Demerara butter tree, *Saouari*, *Peka tuberculosa*.

Solid Oil of Bombay, from *Salvadora Persica*, or *Vernonia anthelmintica*?

Broonga Malagum Oil, of Masulipatam, separates into three portions,—the uppermost, fluid, resembling brown sherry; the middle, of the consistence of ghi, and brownish yellow; and the lowest almost solid, and of a hair-brown colour.

Mooroogana Butter, of Canara, is used for medicinal purposes, and as an ointment for the wounds of cattle injured by tigers. It is said to be produced from a forest tree growing in the Canara jungles. It is dark brown, and is the most solid of the solid oils.

Odul or Adul Oil, of Travancore, separates into two portions,—the upper, fluid, of the colour of golden sherry; the lower, reddish white, of the consistence of ordinary hard salt butter.

Shacotty Oil, of Canara, used for cutaneous eruptions, separates into two portions,—the upper, yellowish and fluid, and the lower brownish-red, and of the consistence of hard ghi.

Hibavania, a solid oil of Canara, from the Sampajoy district, of a clove-brown colour.

Camujay Tree Oil; a small bottle, priced Rs. 2½, from the same district, was a dark gelatinous mass, of the consistence of blanc-mange.

Oil of *Hydnocarpus inebrians*, the thortay oil of Canara, used for sores, is a very valuable vegetable solid oil, of the consistence of ordinary hard salt butter.

Terminalia bellerica, Tani-kai yennay, separates into two portions,—the one fluid, of a pale oil-green colour, and the other white, floccular, and of the consistence of ghi.—*Madras Museum Report*, Simmonds, pp. 510-514.

BUTTON.

Boutons, . . .	FR.	Kanching, . . .	MALAY.
Knöpfe, . . .	GER.	Botoens, . . .	PORT.
Buttoun, . . .	GUJ.	Pogowizu, . . .	RUS.
Gundi, . . .	HIND.	Botones, . . .	SP.
Bottoni, . . .	IT.	Battan, . . .	TAM.
Bahru, . . .	MALAY.	Buttasulu, . . .	TEL.

Buttons are made from every possible material. Those of metal are often gilt; and five grains of gold, and sometimes 2½ grains, are made to cover 144 one-inch buttons, so great is the divisibility of that precious metal. A round ball or button is used in China to mark the rank of their wearers. The members of the first rank, or highest order, wear on the apex of their caps a dark-red coral ball or button; the second class have one of a

light red; third class, light blue; fourth, dark blue; fifth class has a crystal ball; and the sixth class a ball of mother-of-pearl. Members of the seventh and eighth class have a golden ball, and the ninth and lowest rank, one of silver. Each officer may be further distinguished by the decoration of a peacock's feather. This is attached to the base of the ball or button on the apex of his hat, and slopes downwards; it is worn at the back.—*Gray*, 27.

BUTTOO-PASSALEI KIRAI. TAM. *Basella cordifolia*, *Lam.*, *B. alba*, *Linn.*

BUTUM. ARAB. *Pistacia terebinthus*, turpentine.

BUTUNTI, a name given to the Tartars by the people of Lower Kunawar. They also call the Tartars Zhad, also Bhotia, and their country is called Bhot and Bootunt. These Tartars differ greatly in appearance from the people of Lower Kunawar.

BUVUSHIRUM. SANSE. *Phyllanthus niruri*.

BUWAYA. MALAY. Crocodile.

BUXAR, a town, lat. 25° 32' N., long. 84° E. It gives its name to a district which is a subdivision of Shahabad. The town is built on the bank of the Ganges, and is largely inhabited by Mahomedans. A battle fought and won here by the British, 22d October 1764, under Sir Hector Munro, against Mir Kasim, the last independent Nawab of Murshidabad, placed Bengal and Behar in their possession.

BUXUS, a genus of plants, the species of which afford the valuable boxwood. *B. sempervirens* is the common box, and forms a large evergreen bush or small tree, common all over the S. of Europe, from Spain to the N. of Persia and into the N.W. Himalaya. The Himalaya boxwood is known as Pabur Lakri. Mr. Dunlop saw a jungle of this plant at Sem Kharrak, beyond Ramnee, the trees as tall as English firs, and some of them as thick round as a man's body. The chief supply of boxwood for Europe is derived from the southern parts of Europe, and from Asia Minor. European boxwood is more curly, softer, and paler than the Turkey. The Karens furnished Dr. Mason with specimens of a wood not light, but scarcely to be distinguished from the boxwood of Europe. Dr. Wallich found *Nauclea cordifolia* on the banks of the Irawadi, with wood coloured like that of the box tree, but much lighter, and at the same time very close-grained. One Tavoy tree, he says, has a strong, tough wood, in grain like box. *B. Chinensis*, *Lam.*, is the China box tree. *Buxus emarginatus*, *Wallich*, was introduced into Britain from the Himalaya. The wood is found to be softer than the common kinds, though like them in other respects. Woodcuts have been engraved upon this wood, which has the advantage of being of considerable size and thickness.—*Eng. Cyc.*; *Royle, Him. Bot.* p. 327; *Mason*; *Voigt*.

BUXUS SEMPERVIRENS. *Linn.*

B. Nepalensis.

Samahad, Shumaj;	Chiki, JHELUM.
Safed dhawi, . . BEAS.	Papri, Papar, SUT., RAVI.
Paprang,	Shanda, Lag.
Hwang-yang-muh, CHIN.	hune, . . TR.-INDUS.

This grows in northern Persia, also in China in the provinces of Kiung-Chau-fu, Hainan island, and in T'ung-jin-fu in the Kwei Chau province; it is abundant near Manikaran in the N.W. Himalaya. From being lopped, it is generally seen

as a shrub, but at times grows to a tree of some girth, locally only, on the Sutlej and Beas, upon the Rattan Pir, near Panch, above Rawul Pindi, in the Salt Range, and Trans-Indus. The wood is carried to Umritaur and other places in the plains to be made into combs, but the supply is probably getting exhausted. This is found in the Sutlej valley between Rampur and Sunnam at an elevation of 6000 feet. Wood hard, heavy, and nearly as compact as the boxwoods of Europe. Used in the schools of art throughout India for wood engraving, and used for plugs for rifle bullets. The leaves of the box are poisonous to the camel.—*Cleghorn, Panjab Report*, p. 63; *Powell's Handbook*; *Dr. J. L. Stewart, M.D.*

BUYO of the Philippines, betel leaf, the sirih of the Malays, and Piper betel of botanists.

BUYUR. BENG. Jujube, *Zizyphus jujuba*.

BUZ. PERS. A kind of antelope, or long-horned mountain goat, called Tish by the Arabs.

BUZA. HIND. *Hordeum hexastichum*.

BUZGUND. HIND. *Gulpistia*; *Pistachio nut*.

BUZLI. HIND. *Oreoseris lanuginosa*.

BUZOOR-BUTU of Bombay, *Cycas circinalis*.

BUZOTI and Sipah are small but very brave Pathan tribes, the Buzoti numbering 500, and the Sipah 300 fighting men. They live in tolerably close connection with their more powerful neighbours the Afridi, and manage to hold their own. After the British acquisition of the Panjab, they acted up to their engagements in regard to the Khaibar pass, and generally behaved well.

BUZRUK. ARAB. Linseed.

Buzr-kaluna, *Plantago ispaghula*.

Buzr-ul-Bunj, henbane seed.

Buzr-ul-Bunj-Ahmar, seeds of *Cleome viscosa*.

Buzr-u-Shibet, dill seeds.

BWÆ. BURM. *Careya arborea*, *Roxb.*

BWAI-JIN. BURM. *Bauhinia anguina*; *B. racemosa*.

BYA-JAINTI. HIND. *Sesbania Egyptiaca*.

BYAKED, also Byakoor. BENG. Indian nightshade, *Solanum Indicum*.

BYANA or Byara. KARN. A piece of pasture land attached to a village, and assigned as a perquisite to the headman, who lets it out for the grazing of cattle at a charge per head.—*W.*

BYANS, a pass in Garhwal, in which are 9 villages and 184 houses. The people who occupy four of the Garhwal passes are Bhot; those in the Darma pass are said to be Mongols left by Timur. The Bhotia in Byans speak a dialect of Hindi.

BYANS RISHI is a mythical holy man, who is supposed by the people of Byans in the N.W. Himalaya to be dwelling on the top of the Keli-rong mountain. He appears to be the rishi Vyasa.

BYAT, a powerful tribe which came originally from Tartary with Chengiz Khan. They were long settled in Asia Minor; and a number of them fought in the army of Bajazet against Timur. After his defeat, many of the families of this tribe were sent by the conqueror to the province of Diarbekir, but, having quarrelled with its ruler, they went to the territories of Baghdad, where they lived till the time of Shah Tamasp, who brought them into Persia. One half was settled at Souj Bulagh, a district of Teheran, and the remainder at Ashraff, in Mazenderan. They remained on these lands till Abbas II. transplanted a number of them to Khorasan. The

Byat are still more numerous in Turkey than in Persia; but in the latter country, in the reign of the Saffavean monarchs, they were registered at forty thousand families.—*Malcolm's Persia*, ii. p. 218.

BY-IT-ZIN. BURM. *Antidesma paniculata*.

BYLTÆ of Ptolemy, are the Balti people of Little Tibet. They have on the east the Khor country, which is inhabited by a people supposed to be the Chaurandi Scythæ of Ptolemy.—*Cunningham*.

BYNEE ARRACK is from *Caryota urens*.

BYNSA, one of the seven branches of the Bazigar race.

BYRAGI. ANGLO-HIND. For Viragi (vi, privative, raga, passion), Hindu Vaishnava ascetics. The followers of Ramanand and Kabir form their principal subdivisions. The Byraga, or Zafartakia, is a small crooked stick or piece of iron which the Byragi devotee places under his armpit, to lean upon as he sits. See Vairagi.

BYRD, amongst the Rajput races, the blessing of a bard to a ruler. Whenever a Suktawut chief enters the court of his sovereign, or takes his seat among his brother chiefs, the bards still salute him with the dying words of Ballo—'Doonah datar, Chaagoonah joojar; Khorasan, Mooltan-ka-aggul,' meaning 'Double gifts, four-fold sacrifice;' that is to say, with increase of their prince's favour the sacrifice of their lives would progress; and which, for the sake of euphony probably, preceded the byrd won by the founder, 'The barrier to Khorasan and Multan.' The byrd of the Chondawut is 'Dos shees Mewar ka bur kewar,' 'The portal of the ten thousand [towns] of Mewar.' It is related that Sukta, jealous of so sweeping a byrd, complained that nothing was left for him, when the master bard replied, he was 'Kewar-ka-Aggul,' the bar which secures the door, 'Kewar.'—*Tod's Rajasthan*, i. p. 358.

BYSSUS, a long, delicate, lustrous, and silky fasciculus of filaments, by which some of the conchiferous molluscs, for example the Mytilacea, mussels, and Malleacea, hammer oysters, are moored to rocks, etc. It is an assemblage of muscular fibres, dried up in one part of their extent, but still contractile and in a living state at their origin. The tendinous foot of Byssosarca and Tridacna seems to be a step towards the organization of a true byssus. The byssus of the great Pinna of the Mediterranean is in a fleshy sac or sheath at the base of the foot, which is attached towards the middle of the abdominal mass of the animal. In Italy it is manufactured into various articles; and there are few museums without a glove or a stocking woven out of this substance. The pearl oyster, by a byssus, secures itself to the rocks. The animal's foot is composed of muscular fibres, and is $2\frac{1}{2}$ inches long when distended. On the lower side there is a groove lined by a secreting membrane, which is an exact mould for the formation of the byssus. When the animal desires to attach itself to the rock, its foot is protruded, and, after seeking out a suitable spot with the tip for some minutes, is again retracted into the shell. A strong fibre, of the form of the groove in the foot, is thus left, attached to the base of the foot at one end, and to the rock at the other. The process is again and again repeated, until a strong cable is formed; and it was one of the

most important results of the careful investigations of Dr. Kelaart in Ceylon, that the power of the animal to cast off its byssus at pleasure was ascertained. It leaves it behind to make another in a more convenient place. From this ability to shift its berth, it follows that the pearl oyster might safely be taken from its native beds and made to colonize other parts of the sea, and also that it would move of its own accord if the surrounding water should become impure or sandy, or when there is an influx of fresh water. The animal can reform the byssus at pleasure, if in good health and condition.

BYTTNERIACEÆ, the Byttneria tribe of plants, by some botanists considered a distinct natural order, by others reduced to a section of Sterculiaceæ.

BYTURNI river rises near Lohardugga, in lat. $23^{\circ} 29' N.$, long. $84^{\circ} 55' E.$, runs S., S.W., S.E., E., into the Bay of Bengal, by Dhumrah river; length, 345 miles. It receives the Suuk, 95 miles. About 26,000 square miles are drained by the Brahminy and Byturni. It is the Styx of Hindu mythology, and is sacred, more especially at its source. There is a legend that Rama, when marching to Ceylon to rescue his wife Sita from her captor Ravana, halted at the river-side, on the borders of Keunjhar, and numbers of Hindus visit the river every January. It is also written Baitarani.

BYZANTIUM of Ptolemy is supposed to be the Balabli of Gujerat.

C

C, in the English alphabet, has no power of its own, but takes that of k before a and u, and of s before e and i. Its use for foreign words is therefore apt to mislead; for instance, in the Persian and Urdu word circa, a government, an authority, and in common use, there is one letter for two sounds, and two sounds for one letter,—a breach of all system. Even the form of ch has two sounds, as in character and charter. To get rid of this inconsistency, the tendency has been growing amongst scientific men, to substitute ka and ku for ca and cu, and to write Cabul and Cashmir as Kābul and Kāshmir, and Cutch and Cudapah as Kach and Kadapah, and also to use k for the hard ch. The Italians have the soft English ch in cio and ce; and the French and Germans use the letters tch and tsch to meet the equivalent letters in all the cultivated languages of Southern India in which the sounds produced by the English compounds of ch, as in child, have single letters with corresponding powers in all those tongues, and, in all but Tamil, ch'h also has equivalents modified in compound letters, but there is no letter which has two sounds of ch, as in character, child. With entirely similar sounds for ca, cu, and ka, ku, some duplication is unavoidable. See Ch.

CABA. ARAB. A quadrangular building in Mecca, towards which all Mahomedans turn in prayer; the Black Stone, Hajar-us-siab, is built into its wall. It was a lingam of the god Mahadeva or Siva.

CABAB-CHINI. HIND. Cubeba.

CABAN, in the Philippine Islands, a measure of capacity.

CABBAGE, *Brassica oleracea*.

Peh-tsai, . . .	CHIN.	Kobi, . . .	HIND.
Chou, . . .	FR.	Cavolo, . . .	IT.
Kohl, . . .	GER.		

The word is derived from the Latin, *caput*, a head, through the French *cabus*. The opinion is generally entertained by naturalists, that the white and red cabbage, savoy, borecoles, cauliflower, and broccoli have all originally sprung from the wild cabbage of the sea-coast. The cabbage, horse-radish, cress, mustard, turnip, etc., all belong to the natural order of *Cruciferae*. The varieties cultivated are, red, rose, and white; also the hundred-leaved cabbage. Cabbage is largely eaten by the Chinese. From the seeds of a variety cultivated on the continent of Europe, the colza oil used in lamps is expressed.

CABBAGE, a term applied to the new leaf-shoots at the tops of palm trees; they are cooked and eaten as vegetables. That of the *Alsophila excelsa* of Flinders island, Australia, is in substance like a Swedish turnip, but is too astringent in taste to be agreeable, and it is not much improved by cooking.

CABINETS of silver are worn by all the Jangam sect of Hindus, each containing the conical emblem of Siva, the lingam of the Hindus, the phallus of the Greeks, and the priapus of the Romans. The tabernacle of Moloch, mentioned in Acts vii. 43, was doubtless a cabinet in which the object was enclosed; and the shrines of Diana were most probably of the same construction, and for the same purpose. A medal, with a figure of Diana's shrine, shows pointed cones and a semi-lune. Bacchus brought his thyrsus from the east when he returned from his Indian expedition. It was said to have been surmounted by a fir cone or pine, but a recent writer in the *Edinburgh Review* thinks it was the date. This fruit, according to Pliny, was consecrated to the worship of almost every heathen divinity. The date palm is the scriptural emblem of all that is dignified, beautiful, and good, and entered largely into the ornamentation of temples.—*Edinburgh Review*; *Milner's Seven Churches of Asia*, p. 130.

CABLE.

Tau, Ankertau, . .	GER.	Tali-sawub, . .	MALAY.
Langar ki tassai, .	HIND.	Amar, . . .	TEL.
Gomena, . . .	IT.		

In Southern Asia some cables for ships are made of coir, the requisite quantity being laid out at full length along the beach or other convenient spot; they are made up in strands, and twisted in a very simple machine, viz. a strong wooden frame in a strong board, across which three or four pins are placed, and turned, like the screws of a carpenter's bench, by as many men; the further end of the cable is fixed to a large revolving pin, which is turned round in a similar manner. As the strands are twisted, the horse in which this is fixed is drawn nearer to the other. It is evident that cable strands thus laid are very unequally strained, the outer lines being tight, while the inner ones are slack. By laying the strand and twisting it as each yarn leaves its separate reel, a strand is formed of which each yarn bears its due proportion of the strain. Huddart's patent rope was laid on this principle; the necessary apparatus for winding off the yarn might be readily made. Cables for the Shakespear bridges were formed of the country rattan. In the Red Sea, cables formed

of the coating of the branches of the date tree are used; and the same material, with a proportion of fibre of the *Kaldera* bush, the *Pandanus odoratissimus*, is used by fishermen in forming drag ropes for their nets at Oopada. In the Eastern Archipelago rattan cables are largely used.—*Mr. Rohde, MSS.*

CABO NEGRO, Spanish, of the Philippines, is obtained from the gomuti palm, *Arenga saccharifera*, and resembles black horse-hair. It is found between the trunk and branches, in a matted form, interspersed with black twigs. When separated from the latter, it is manufactured into a cheap and durable cordage, chiefly used for cables and standing rigging. A single palm in its lifetime yields two crops of this material, each amounting to about 9 lbs. The twigs are used as writing pens, and also as arrows. Under the hair-like material a soft substance is besides collected, used as oakum for caulking, and as such exported to China.—*Walton's State*, p. 119. See Gomuto.

CABOOK. SINGH. Lateritious deposit, said to be the product of decomposed gneiss.

CABOOL. See Kābul.

CABRAL. Alvarez Cabral, the Portuguese commander in the second expedition sent to India by the Portuguese. It consisted of 13 ships and 1200 soldiers, and sailed from the Tagus in March 1500. In his route he discovered Brazil, A.D. 1500, and took possession of it, and then sailed to Calicut. He lost four ships, in one of which Bartholomew Diaz perished. He entered into treaties with the chiefs at Cochin, Cannanore, Onore (Honore or Honawar), and Quilon, and built fortresses at their principal towns. The Zamorin at first was cordial, but, being instigated by the Mahomedans, attacked their fort, and killed all the Europeans. Cabral retaliated by destroying ten Mahomedan ships, and then returned to Lisbon in July 1501.

CACALIA COCCINEA, a flowering plant, mostly found in waste places.

Cacalia Kleinia, *Wight*. Hart's ear.

Lisan ul snur, . .	ARAB.	Yenna putu nalikel, TEL.
Gao zaban, . . .	PERIS.	Jimmudu, . . .
Ermina-Kullie, . .	TAM.	

The leaves resemble the tongue of the buffalo; the stalks are prickly, and covered with white spots. While fresh, the leaves have a strong smell like hemlock; they are given in decoction in rheumatism, syphilis, and lepra. For the class of cases in which sarsaparilla is usually employed by European practitioners, they seem to be highly esteemed by Mahomedan and Hindu practitioners. A water distilled from the leaves is kept for use.—*O'Sh.* p. 420; *Honigberger*, p. 246.

Cacalia sonchifolia, *Linn.*

Emilia sonchifolia, D. C.	E. purpurea, Cass.
Shudimudi, . . .	BENG. Udiram panum, SANSE.
Pella camudi, . .	MALAY.

A decoction of this plant is deemed antifebrile on the Malabar coast.—*O'Sh.* p. 420.

CACA-MULLU. TAM. *Pedaliu murex*. Caca-palam, *Lagenaria vulgaris*.

CACATUINA or Cocatoo, a sub-family of birds of the family Psittacidae, of the order Scansores. See Birds.

CACAY tree is the greatest ornament of the woods of Karnata. The foliage is a fine shining green; and the pendulous strings of flowers surpass those of the laburnum, not only in beauty,

but in length and number. In the cool of the morning they diffuse a most agreeable perfume. The plant is sacred to Ganesh, the god addressed by all Hindus about to commence any undertaking. The people worship him under the form of his favourite tree. The cultivators of every village place a stake of the Cacay on the ground, level a circular place round it, and purify this area with cow-dung. On this spot they assemble before the commencement of seed-time, burn some incense before the stake, make offerings of rice, milk, and the like, and pray for the success of their crops. The ceremony concludes with a rural feast. It seems to be the *Cathartocarpus fistula*.

CACHALOT, the *Physeter macrocephalus*, or sperm whale. The male ranges in length from 38 to 76 feet, is about 60 feet in the average. The female does not exceed 30 or 35 feet. The cachalot is without symmetry, of a prevailing dull black colour, occasionally marked with white, especially on the abdomen and tail. They propel themselves round by striking and pulling against the water with the flashes of their tails. The lower jaw is diminutive, slender, and in form not unlike the mandible of a bird; the teeth of the upper jaw, wholly ivory, in aged males are of great solidity, and weigh from 2 to 4 lbs. each. It spouts a thick watery mist from its nostrils at intervals of ten or fifteen minutes. The valuable sperm is chiefly situated in the head. It is a solid mass of soft, yellow, oily fat, weighing between 2 and 3 tons, in a hollow of the head, bared on the upper jaw, and forming the front and lower part of the snout. The cavity, called case, is situated to the right and beneath the spouting canal, and corresponds to nearly the entire length of that tube. It is filled with a very delicate well of cellular tissue, containing in large cells the limpid and oily fluid, which is liberated on the slightest force. The quantity, chiefly spermaceti, contained in this singular receptacle is often very considerable, and nearly 500 gallons have been obtained from the case of one whale. It has been noticed in the Mediterranean, and a stray individual in the Thames.—*Hartwig*.

CACHAR, a district in Assam, in the upper portion of the valley of the Barak, extending from lat. 24° 13' to 25° 50' N., and from long. 92° 26' to 93° 29' E. Its area, 3750 square miles. Its population in 1872 was 205,027, in the area of 1285 square miles, to which the census was confined. They consist of Manipuri, Cachari, Lushai or Kuki, Naga, Mikir, and Khassya. The Burmese invaded it, but were again expelled during the first Burmese war, when the legitimate raja, Govind Chandra, was restored by a treaty. On the southern frontier of Cachar lies the territory of the Lushai or Kuki, a most warlike tribe, who in 1848-49 drove up the Kuki from the south into Cachar; but Colonel Lister, by a judicious employment of the Kuki as soldiers, exerted a salutary influence over the Lushai. The Lushai, however, have in their turn been pressed up northwards by another tribe still more powerful than themselves, called the Poi, who approached from the south-east. The hilly tract lying between Cachar and Chittagong is inhabited by the Lushai, who claim and hold all the tract of country to the south of the parallel of the latitude of Chatterchoora hill, and east of Hill Tiperah to the Tepai river is the Burmese frontier. The Cachari dynasty ended on

the assassination of Govind Chandra, without heirs, in 1830, and in 1854, Tularam Senapati of N. Cachar also died without heirs. The Cachari people must at one time have had an extensive sway in the valley of the Brahmaputra. The people adopted Hinduism about the beginning of the 18th century, and about half the number profess that faith. It yields rice, petroleum, salt from salt wells, and several valuable timbers, tea, caoutchouc from the *Ficus elastica*. The elephant, rhinoceros, buffalo, metna or wild cow, gaurus, tiger, black bear, and deer occur, with the sambur and the barah-sinha. The Manipuri women weave excellent cotton cloth, and a fine net for mosquito curtains. The agriculturists band themselves together as guilds or *khel*.—*Imp. Gaz.*; *Aitcheson's Treaties*, p. 77; *Ann. Ind. Adm.* xii. p. 86.

CACHARI. HIND. *Cucumis pubesce*. s.

CACHAR KALANG. TAM. *Dioscorea alata*.

CACHU. HIND. *Colocasia antiquorum*.

CACHUR. HIND. *Curcuma zedoaria*.

CACODOXUS ARGUS. Linn. A fish eaten by the natives, though many reject it on account of its reputed disgusting habits. In several examined in the estuaries of the Ganges and at Penang, the stomach contained remains of small fishes and crustacea. According to Bennet, it is in Ceylon angled on hooks baited with a kind of sea-weed ('Pendah'), of which this fish appears to be particularly fond.

CACRI. HIND. *Cucumis utilisissimus*.

CACSHA, in the astronomy of the Hindus, the orbit of a planet, or the circle which ancient astronomers called the deferent; for the *Cacaba* carries epicycles (*Paridhi*), like the deferent.—*Warren*.

CACTACEÆ or *Cactæ*, the Indian fig tribe of exogenous plants; many genera and species are found in S.E. Asia. Some species are the food of the cochineal insect. Of these the *Opuntia tuna* seems the most employed in Peru; *O. Hernandezii* is the most celebrated in Mexico; and *O. cochenillifera*, the native province of which is somewhat doubtful. The Old Man cactus, *Cereus senilis*, *Salm*, is so called from the hoary aspect of the columnar stems. The cactuses are natives, almost exclusively, of the new world, from whence the prickly pear (*Opuntia Ficus Indica*), now abundantly naturalized in the Atlantic islands, and generally on the shores of the Mediterranean, where it serves to form impenetrable fences, was originally introduced.—*Engl. Cyc.* p. 710; *Voigt*, p. 60.

CACTUS INDICUS. Roxb.

Opuntia Dillenii, Haw.

Nag-phunee, . . . BENG. Kabuli-tui, Gangi-

Naga-kali, . . . TAM. sho, Kangi-ohii, PANJ.

Dr. Roxburgh supposed this plant to be a native of India, grounding his opinion on its general distribution and its native names. Dr. J. S. Stewart mentions it as a plant of the Panjab, on which the wild cochineal insect feeds. In the Panjab, it is grown as a hedge up to 4000 and 5000 feet, near the Jhelum. Dr. Roxburgh also mentions *C. Chinensis*, with its synonym *Fabricia bracteata*.—*Roxb.*; *Dr. Stewart*; *Voigt*.

CADABA INDICA. Lam., W. and A.

Stromia tetrandra, Roxb.

Indian Cadaba, . . .	ENG.	Chimurudu, . . .	TEL.
Ada-morinika, . . .	TEL.	Polumorinika, . . .	"
Chekonadi, . . .	"	Vula, . . .	"

A straggling shrub, flowers in terminal racemes, of a dingy white, nearly throughout the year; very common about Musalman burial-grounds. *C. Indica, Lam.*, and *C. trifoliata, W. and A.*, are plants of Coromandel.—*Riddell*.

CADAGA SALEH. TAM. *Rungia repens*.

CADALACCA. MALEAL. Cadalay, TAM. *Cicer arictinum*.

CADALI. SANSK. *Musa paradisiaca*.

CADALI PUA. TAM. *Lagerstrœmia reginæ*.

CADAM. HIND. *Nauclea parvifolia*.

CADAPILAVA. MALEAL. *Morinda citrifolia*.

CADASSUM. TAM. *Barringtonia racemosa*.

CADDIS-WORM insects are found in all tropical Asia. They belong to the family Leptoceridæ, and the genus *Setodes* contains several of them; they are enclosed in cases with projecting shields.—*Hartwig*.

CADEIARI. MALEAL. *Achyranthes aspera*.

CADESIA. The battle on the plains of Cadesia, on the border of the Euphrates, fought in A.D. 632, sealed decisively the fate of Iran. This battle lasted for three days; was fought during the khalifat of Omar, by his general Saad, against Rustum, the general of Yezdejird III., the last of the Sassanian race. The Arabs are said to have lost about 8000 men, while the loss on the Persian side amounted to nearly 100,000.

CADJAN. ANGLO-MALAY.

Jowli,	HIND.	Tennam olé,	TAM.
Cajan,	MALAY.	Tati aku; Cobaré aku, TEL.	
Paun-an olé,	TAM.		

A commercial word, used by the British in India for the dried leaves of the cocoanut and palmyra palms; they are largely used as a thatch, which resists the rain better than tiles; but roofs made of them should be relaid before the commencement of the rainy season; 149,500 were imported into Bombay in the year 1850-51. Books of palm leaves, called kavile in Telugu, are prepared from the palmyra and the fan or cocoanut palm, and are written on with an iron style.

Kujan, MALAY, are mats made from the leaf of the Mang-kwang. See Cocoanut Palm; Fan Palm; Ola; Palmyra.

CADJU. MALAY. *Anacardium occidentale*.

CADU. HIND. *Lagenaria vulgaris*.

CADUMBAH. MALEAL. *Barringtonia racemosa*.

CÆLODEPASCALYCONUM. *Bedd.* A plant which grows at Paupanassum, at the foot of the Timmervelly hills, and called kotpira. Its wood is very hard.—*Bedd. Fl. Sylv.*

CÆSALPINIA. Some of the species of this genus are useful trees or shrubs. *C. bonducella* and *C. digyna* are of the climbing plants, the seeds and oils of which are used in medicine. The pods of *C. coriaria*, or sumach, a small tree, are used as a tanning material; *C. paniculata* is a magnificent climber of the Himalayas; and *C. sappan* yields one of the Brazil woods of commerce. The fleshy pods of a *Cæsalpinia* are largely used as soap in all parts of China, and may be bought in every market town. *C. bimas* grows in the Eastern Archipelago. *C. Brazilensis* of S. America, province of Pernambuco, might be introduced into India; its wood yields a red dye; it is the Brazil wood of commerce.

CÆSALPINIA CORIARIA. *Willd.*

Poinciana coriaria, Jacq.

Libi-libi, Divi-divi,	American sumach,	ENO.
Dibi-dibi,		

This small tree is now growing plentifully about Singapore, Salem, Bangalore, Hunaur, and Chica-cole. It is a native of S. America, but in 1842 was introduced by Dr. Wallich into the Botanical Gardens at Calcutta. The seed-pods, for tanning leather, are considered superior to all the Indian astringents, and leather tanned with them is considered equal to that of the best of Europe manufacture. The pods are oblong, compressed, somewhat obtuse, curved laterally, the inner side being concave and the other convex. It is to the curved pod that the commercial term of divi-divi or libi-libi is given. The average produce of pods from a full-grown tree has been estimated at 100 lbs. weight, one-fourth of which consists of seeds or refuse, leaving about 75 lbs. of marketable matter. The divi-divi pods are of a dark brown colour externally, when ripe, and $\frac{3}{4}$ ths of an inch wide. Underneath the outer skin of the pods, and separated from the seeds by a layer of woody fibre, is a considerable thickness of astringent matter of a light yellow colour, almost pure tannin, slightly darker in colour than that manufactured from galls, about 60 or 65 per cent. of the whole pod (excluding seeds). At an interval of six feet apart, an acre of ground will contain 1210 trees, yielding an average of 810 cwts., and 30 lbs. of divi-divi, or above 20½ tons of marketable matter, worth, at only £5 per ton, £200. The quantity of mucilage it contains precludes it from the use of dyers. One part of divi-divi is sufficient for tanning as much leather as four parts of bark, and the process occupies only one-third of the time. The selling price ranges from £8 to £13 per ton. The imports into the United Kingdom in 1844 were 3900 tons; in 1845 and 1846, about 1400 tons each year; during the subsequent three years the imports were merely nominal; but in 1850 a renewed demand seems to have sprung up, for 2770 tons were imported into Liverpool, and a few tons into London.—*Voigt; M. E. J. R.; Dr. Cleghorn's Reports; Markham, p. 353; Simmonds' Comm. Products, p. 503; Indian Annals, No. vii. p. 120; Jurors' Report, Madras Exhibition, 1855.*

CÆSALPINIA DIGYNA. *Rott.*

C. oleosperma, Roxb. F. I. ii. 357.

Umul Kuchi, BEN. Nune gach'cha, TEL.

This climbing shrub grows in the Peninsula of India, and at Bhagulpur. The seeds yield an oil used in lamps.

CÆSALPINIA PANICULATA. *Roxb.*

Guilandinapaniculata, Lam. | Huoo-Kouk, BURM.

Grows in all India; magnificent climber in Sikkim, festooning the trees with its dark glossy foliage and gorgeous racemes of orange blossoms.—*Hooker's Him. Jour. p. 25.*

CÆSALPINIA SAPPAN. *L.* Sappan wood.

Lolan,	AMBOYN.	Sachang,	JAVA.
Bakam,	ARAB., BENG.	Kayu sappan,	MALAY.
Tein n'gyet,	BURM.	T'sia-pangam,	MALEAL.
Suh-muh,	CHIN.	Sanya; Roro,	MOLUCCAS.
Pattang,	DUKH.	Sibukao,	PHILIPPINES.
Brasilienhout,	DUT.	Pao Brasil,	PORT.
Brazil wood, Red wood, ENG.		Madera del Brasil,	SP.
Bois de Brasil,	FR.	Vattangly,	TAM.
Brasilienholz,	GER.	Pattanga chakka,	TEL.
Pattangay,	HIND.	Bakkapu chettu,	"
Legno del Brasile,	IT.	Bakamu chakka,	"
Verzino,	"	Bokmo,	URIA.

This tree, the *Verzina* of Cæsar Frederick, grows widely over S.E. Asia. Its wood is a very important article of commerce. In 1842 as much as

78,000 cwt. were shipped from Ceylon, but the export from thence has decreased. A large quantity is exported from Siam and the Philippine Islands; as much as 200,000 pikuls annually from the former, and 23,000 pikuls from Manilla. 3524 pikuls were shipped from Singapore in 1851, and 4074 pikuls in 1852. 3670 tons of wood were imported into England in 1852, at £7 to £12 the ton. Fée considers *Cæsalpinia sappan* to be one of the Brazil woods of the merchants. But it is probable that it is the produce of more than one genus. The best Brazil wood is said to come from Pernambuco, where it is called Pao da Rainha, or Queen's Wood, on account of its being a royal monopoly. *C. sappan* grows in the N. Arcot forests, in the Nalla Mallai of Cuddapah in the Kotah jungles; is a native of Malabar, Ceylon, Bengal, Burma, Tenasserim, Siam, and Amboyna; is found in the immediate vicinity of Prome, growing on the small hills of the place, and near Thong-zai, in the northern part of the Rangoon district, where it is also seen in small quantity. It is cultivated in Palghat for dying the straw used in mat-making, and from its high price for this purpose, it is not used for carpentry. It grows with great luxuriance in South Malabar, where it is cultivated rather extensively by the Moplahs, who plant a number of the seeds at the birth of a daughter. The trees require fourteen or fifteen years to come to maturity, and then become the girl's dowry. Dr. Cleghorn thinks the dye-wood is damaged by being allowed to float in salt water. In the Bombay forests it grows freely in their cultivated places without any care, but the heart-wood is dingy, and wants that fine pinkish red which the wood of the southern forest has. The heart-wood being cut into chips, steeped for a considerable time in water, and then boiled, is used for dyeing. The cloth or thread is repeatedly dipped in this liquid, and hung to dry between each wetting, till it is brought to the shade required. To fix the colour, alum is added. The powder commonly used at the Hólee festival is extracted from the wood of this tree. The reddish-brown tint so frequently met with in the clothes of the poorer Chinese, is produced from this wood. The seeds are used for colouring milk. The chips are used like logwood, and medicinally.—*Marsden's Sumatra*, p. 95; *Voigt*; *Captain Macdonald*; *Drs. Wight, McClelland, Gibson, and Cleghorn*.

CÆSALPINIA SEPIARIA. *Rozb.* Mysore thorn.

Reichardia decapetala, Rottl.

Hsao-kyan-bo, . . . BURM.	Phalwai, . . . HIND.
Chilloor; Kilgatch, HIND.	Urn, Urui, of KAGHAN.
Haidar ka jhar, . . . "	

Grows in Kamaon, Nepal, Bengal, Ava, Tavoy, Mysore, Ajmir, and in all the Himalayas under 5000 feet. It is a scandent, strong-armed shrub, used to fence around fields, and forming a splendid impenetrable hedge, covered with bright green leaves and large yellow spikes of flower. Hyder Ali surrounded fortified places with it.—*Voigt*; *Irvine*; *Chow-Chou*; *Thompson*; *Stewart*.

CÆSAR, the Arabic, Greek, and German Kaiser, a title of the emperors of Rome, which was applied to the Byzantine emperor, until the title was transferred to the Turkish sultan.

CÆSAREA ruins stand by the seaside, and from the summit of a tower that is washed by the

waves, a view is obtained of the whole coast of Palestine, from Cape Blanco to Jaffa. When Colonel Skinner passed through, the area of this once proud city was used for a burial-ground.—*Skinner's Overland Journey*, i. p. 155.

CÆSAR FREDERIQUE, a Portuguese jeweller who wandered from Bussora to Kurachee, and thence to Goa and Vijayanagar.

CAFFER BREAD, of the Cape of Good Hope, is from the *Encephalartos caffer*. The stem, when stripped of its leaves, resembles a large pineapple. It is also called the Hottentot bread-fruit. The Kafir people bury it for some months in the ground, then pound it, and extract a farinaceous matter of the nature of sago.—*Captain Carmichael*.

CAFFER TEA, the leaves of *Helichrysum nudifolium*, common in the Cape Colony, and used medicinally.

CAFFREE CHILLEY, *Capsicum grossum*.

CAFIR, also Kafir, a term employed in India to designate the African race, usually the large-featured, curly-haired variety. La Bourdonnais enlisted many into his army, but the British in India have never enlisted them. They are employed in the city of Hyderabad. A small number were employed in the Ceylon Rifle Corps; comparatively few of their children grew up, usually falling victims to pulmonary complaints. Cafir also is a term to designate the idol-worshipping race in the N.W. Himalaya, known as the Siah Posh Cafir, because of their black-coloured clothes. Also a general term of abuse by Mahomedans to any non-believer in Mahomed. It is from the Arabic, meaning a denier, an infidel.

CAGGAR, the ancient Drishadvati, a river of the Rajputana desert, also known as the Hakra, but absorbed by the desert sands many centuries ago. The stream took a westerly direction by Phoolra, where it is still to be traced, and fell into the Indus below Cutch. Its absorption occurred during the reign of Rao Hamir, prince of Dhat, and caused great physical and political changes in the country. There are vestiges of large towns buried in the sands; amongst them is the Rung Mahal, west of Bhatnair, with subterranean apartments still in good preservation. The tradition is that it belonged to a Powar prince in the time of Alexander the Great, Sikandar Roomi. The absorption of the Caggar river is named as one of the causes of the comparative depopulation of the northern desert of India.—*Tod's Rajasthan*, ii. pp. 213, 214. See *Saraswati*.

CAHAMILLIE. SINGH. A very hard, fine, close, even-grained heavy Ceylon wood.

CAHUA. HIND. *Pentaptera arjuna*.

CAILLEA CINEREA. *G. and P.*

<i>Dichrostachys cinerea, W.</i>	<i>Desmanthus cinereus, W.</i>
<i>Mimosa cinerea, Linn.</i>	<i>Acacia dalea, D.C.</i>
<i>Mavalinga maram, TAM.</i>	<i>Venuturu, . . . TEL.</i>

This small tree grows in Ceylon, in the Madras Presidency, and is common on sterile plains of the Dekhan, Delhi, Patna, and Paghamew.—*Voigt*.

CAIN, according to Bunsen (iv. 426), Qayin, is the type of the dwellers in towns. He was the progenitor of the city-building Aryan, as also of the vast Turanian wanderers, who move about all but cut off from the rest of mankind. Cain is called Kabil by Mahomedans, and is fabled by them to rest under Jab'l Shamshan, the highest wall of the crater at Aden, where he and his

progeny, tempted by Iblis, erected the first fire temple. See Abu Kubays.

CAIRN.

Ganj, HIND. | Birah, MAHR.

A heap of stones or tumulus piled over the resting-place of the ancient dead, in different parts of S. India. Prior to the Buddhist stupas or tope, this seems to have been a common mode of covering the dead; indeed, the tope is only a cairn regularly built. On the Neilgherry hills are found remains of cairns, barrows, cromlechs, kistvaens, and circles of upright loose stones. In the cairns or barrows, vases, cinerary urns, and other vessels of glazed pottery, are often found, which sometimes contain human bones, more or less charred, and mixed with ashes; sometimes a little animal charcoal alone. They are met with in almost every part of peninsular India, from Nagpur to Madura, in immense numbers on the Annam hills, a range on the south side of the great Coimbatore gap, which forms the commencement and northern face of the Southern Ghats, those on the Annamly being of a more advanced order and in better condition than the Neilgherry barrows. Similar remains are found in Circassia and Russia; and circles of stones surrounding ancient graves, are found on the southern Arabian coast, and in the Somali country in Africa. All around Hyderabad and Secunderabad, in the Dekhan, are great numbers of cairns; and many of these remains are at Rajan Kooloor, in Zorapur, and also at Siwarji, near Ferozabad, on the Bhima. Neither the hill people, the Toda and Kurubara, nor any Hindus, know anything about the race to which these remains belonged; and neither in Sanskrit literature, nor in that of the Dravidian languages, is there any tradition on the subject. The Tamil people generally call these cairns pandukuri; kuri means a pit or grave, and pandu refers to the Pandu or Pandava brothers, to whom so much of Hindu mythology relates. The resemblance of the barrows and their contents (with the cromlechs, etc.) to the remains which are discovered in the ancient seats of the Celtic race in Europe, is exact (Dr. Caldwell's Grammar). In India, the topes or tumuli of Kraku-chanda, Kanaka, and Kasyapa existed before the preaching of Sakya; and the ancient elemental deities of the Vedas preceded the worship of Dharma or concrete nature.

Kodi Kul, or umbrella stone, Topi Kul, cap or covering stone, and Pandu Kul or Pandu stones, are other names by which the cromlechs of Southern India are known to the people. The Topi Kul is a large mushroom-shaped stone placed on the ground. Underneath it are urns of baked pottery, containing portions of human bones mixed with charcoal, and a fine powder or sand, in which also the urns had been placed. And whether with the Kodi Kul, the Topi Kul, the kistvaen or cairns, a foreign earth, i.e. an earth not belonging to the locality, is used to cover in the funeral urns. Mr. Babington was the first to notice them, about the year 1820. Underneath the Topi Kul he found a flat stone, and beneath it an urn or urns, resting in a shell corresponding to its shape, filled in with fine sand; and on ledges near the urn, were remains of iron implements and weapons, with heads of various kinds, an iron tripod, a lamp, etc. In 1831 Captain Harkness found groups of cairns on the Saroni hill at Oota-

camund. They are low mounds of earth rising to the centre, surrounded by circular walls of dry stone, about 3 feet high, and about 6 to 8 feet in diameter. Underneath the surface earth was a pavement of large flat stones, resting on smaller stones, beneath which was a layer of fine brownish-black mould, 2 feet in depth, intermixed with broken pottery, charcoal, broken clay, images of buffaloes, and with other soil of a blacker and finer kind. Below the covering flags were numerous urns filled with black earth, bone, and charcoal, some perfect, some broken.

Captain H. Congreve, 1847, also described these, and he claimed for them a Scytho-Celtic or Druidic origin, and identity with similar European remains. He found at Ootacamund and in the Neilgherries generally, cairns with single and double rows of stones round them, disposed in circles; open temples of large rocks set on end, as at Abury in Wiltshire, and Rowldrich in Oxfordshire; single rocks as altars, surrounded by rough circular walls and rings of stones; barrows environed with a trench and mound; and single stones 5 to 10 feet high, etc. Beneath the flagstones, remains were found as described by Captain Harkness. Captain Congreve found cromlechs at Acheny, near Kotagherry, in which the people said pigmies not a foot high had been buried. At Adi Raer Cottay, he found a group of the kistvaen, or closed cromlech; and he said that there is not a relic of Druidism existing in England, the type of which he had not found on the Neilgherry hills.

Captain Meadows Taylor, between 1850 and 1860, discovered and described cromlechs, kistvaens, and cairns, in Zorapur in the Dekhan. The cromlechs were closed on three sides, and the south-west front left open. The kistvaens were closed on all four sides; and both were covered at top with a single slab of large size. Some of them had a round hole, of 6 to 9 inches in diameter, in the centre of the south side or south-west side. The kistvaens were partially filled with fine black or grey earth, intermixed with broken pottery, partly calcined bones, and pieces of charcoal. The cromlechs contained nothing. Both cromlechs and kistvaens were formed of sandstone and limestone rock, altered by the intrusion of granite. Some of the cromlechs and kistvaens were of large size,—the cromlechs up to 15½ feet long by 9 feet broad, and 2½ feet thick; the kistvaens up to 12 feet by 10½ feet, and up to a foot thick, and the side slabs 12½ by 8 feet. Those at Rajan Kooloor, at Haggeritgi, and elsewhere, are identical with those of the Neilgherries, with the kistvaen called Kitscoty House near Aylesford in Kent, with those in Wales and other European localities, and in Circassia, as described by Mr. Bell. The people call them Mori, Mohori, or Muni houses.

The remains near Hyderabad consist of single, double, and treble rows of large stones. In some places the space within the circle has been paved with large pebbles beaten down with clay; in others the circle stones have been simply placed around the covering earth, which has a heaped-up mound form, and contains only earth and small stones. They vary up to 50 feet in diameter. At various depths below, but chiefly about 9 to 14 feet deep, is a great block of rock, beneath which is a space enclosed by slabs, and also a passage or entrance. The grave-pits underneath are from 9

to 15 feet. The floor of the pit is flagged with stone slabs, on which is a cist, formed by slabs on edge, with a covering slab. Around the head of each cist were found circular vases, urns of red and black pottery, glazed and unglazed, spear heads, arrow heads, fragments of swords, of bill hooks, iron lamps, iron tripods. In one compartment of a cist Captain Taylor found a perfect male skeleton; in others, one, two, or three smaller skeletons, evidently of women, some with the skulls separate from the bodies, and the skeletons lying on their bellies; and between the upper flagstone and the cist, intermixed with the earth, were skeletons and portions of skeletons in every possible position, the skulls of many being separated from the bodies. These he considered to be the remains of persons who had been sacrificed and thrown into the grave-pit of the cairn. The slabs above, the guiding entrance below, and the cists, lay invariably N.E. and S.E.

In the circles near Hyatnuggur, and other places around Hyderabad, southwards to Zorapur, bells, iron weapons, and pottery have been found. The weapons consisted of arrow heads, a javelin rod like that used by the Binjari race of the present day, lance and spear heads, bronze bells and cups. In a Hyatnuggur cairn, also, were found chank shells (*Turbinella pyrum*), some of them intended to be used as conchs, others as ornaments, necklaces, etc. The pottery articles were cups, and an hour-glass-shaped drum, also human and other bones.

All around in the cantonment of Secunderabad and Bolarum are numerous remains, many of which have been opened, and some very perfect skulls obtained.

There are many cairns on the Masulipatam road, noticed by Captain (now General) Doria. Also at Goor Muktul, between Zorapur and Hyderabad; many near Dewarconda, about 40 miles S.E. from Hyderabad; also at Narkaelpilly. A return from Mr. Pelly showed 2129 cromlechs and kistvaens in the Bellary district, which the people believe to have been the dwellings of a diminutive race called Mohori. Cairns, cromlechs, and kistvaens are also to be seen in all the Raichore Doab; in the district lying between the Krishna and Tumbudra, on the Yemmee Gooda hills.

At Vibuthalli Captain Taylor discovered a great group of natural rocks or tors, surrounded by circles of stones. One at Vibuthalli consists of a square of 22 rocks on each side. It is partly incomplete, and the area measures 360 by 340 feet. At Shahpur is a parallelogram, where 56 huge rocks enclose a space and tumulus 400 feet by 260. Some of the masses exceed 200 tons in weight, one of them 267 tons, and it is difficult to imagine how such masses were moved from the granite hills at Shahpur, three miles distant. It had been a place of cremation on a large scale, and the tumulus consisted of human ashes, charcoal, and pieces of bone; and the remains of each body had been covered over with white earth.

The Zorapore graves are of two kinds, one in which the dead were buried, accompanied by human sacrifices; the other burned their dead, and placed their ashes in cairns, or collected and placed them in kistvaens.

Captain Congreve regarded these Neilghorrie remains to be those of Scythic races. Captain

(Colonel) Taylor discusses the question whether of Scythic races, Aryan or Turanian. Over vast wildernesses in the northern regions of Asia, along the banks of the Irtysh, and beyond the remote Yenisei, innumerable tumuli are scattered, containing the remains of ancient art and long extinct races of men. Implements of silver, gold, and copper, girdles of the precious metals, bracelets decked with pearls, fragments of porcelain, have surprised the travellers who have seen a few of the tumuli opened. Similar tumuli are spread over the north of Europe. Eschricht, Nilsson, and Retzius, in Sweden and Denmark, Dr. Wille in Ireland, and MM. Robert and Serres in France, have attempted to identify in these relics the remains of different races supposed to have inhabited successively the north of Europe in early times. In the opinion of the Swedes, the sepulchral remains of northern Europe may be referred to three successive eras. They display different physical types and different stages of advancement in civilisation. The oldest are the relics of a people with round heads, having the transverse diameter of the cranium large in proportion to the longitudinal. The implements and ornaments which are found in the tombs of this race, indicate the greatest rudeness. They consist of tools and the heads of arrows and lances made of stone and bone, but nothing indicating a knowledge of the use of metals. It seems to be the opinion of Retzius and that of Nilsson (*Scandinaviska Nordens Urinvanare*, af S. Nilsson, Lund. 1838-43), that they were the burial-places of a people much older than the Celts. Similar remains, discovered in France, have been supposed by MM. Robert and Serres to be referable in like manner to different eras.

In the Alford district of Aberdeenshire are many cairns of enormous size. Some people think they have been beacons to give warning in time of danger; but many of them are situated in low places, and they are supposed to be tombs of some great men. It is a common saying among the people of that country to this day, when any person makes them a gift, 'God I wat, gin I live ahint you, I se add a stane to your cairn.' The old Celtic is, 'Curri mi clach er do cuirn,' 'I will add a stone to your cairn;' i.e. I will do homage to your memory when you are dead. And to this day many old people never pass by any of these cairns without throwing a stone to it.

The Gond races in the Vindhya place great stones over the graves. Doorgawati, queen regent of Gurha Mundela, was killed in action against the troops of Akbar, under Asaf Khan, as an inscription of her family asserts (*As. Res.* xv. p. 437). She was interred at the place where she fell (*Ben. As. Soc. Journal*, vi. 628), and to this day the passing stranger places, as a votive offering, one of the fairest he can find of those beautiful specimens of white crystal in which the hills in this quarter abound. Two rocks lie by her side, which are supposed by the people to be her drums converted into stone; and strange stories are told of their being still occasionally heard to sound in the stillness of the night by the people of the nearest villages. The very ancient custom of casting a stone upon untimely graves is still observed throughout Spain, accompanied by a silent prayer for the dead.

In the Upper Godavery, British side, and Kistna

district south of Jaggiapetta, tombs and cairns are found in groups, particularly in the Kistna district, where there are hundreds on one hill alone,—four stone slabs on edge, and slab at bottom, and one on top; then round the tomb a ring of small stones, some 12 feet in diameter, and small stones within that heaped over the grave. The grave is sunk from 2 to 4 feet in the ground, according to the breadth of the side slabs. The sizes of the graves are from 1 foot 6 inches long by 1 foot broad, to 6 feet long by 2 feet broad. In the Kistna district the slabs are limestone; in the Upper Godavery, trap, hypogene rock and sandstone. In several of these graves has been found a skeleton. The body had been laid on the right side, head resting on right arm, head always north, feet south. The bones crumbled almost at a touch. The size of the upper slabs on the tombs vary in size from 4 feet by 3 feet to 8 feet by 6 feet; some of the smaller tombs have no slabs on them on top, but only small stones piled up as a cairn.

In the Upper Godavery, also, are tombs without cairns, no slabs at bottom, only four forming the sides. They are generally 4 feet by 3 feet square; some immense slabs on top measured 14 by 5 feet. The graves are filled up with small earthen pots, filled with burnt bones and clay. Beads, apparently made of ivory, and some small glass ones of red and green colour, in the pot that contains the charred remains of the skull. There is a splendid tomb of sandstone on the Nizam's side of the river opposite Lingala; the slab on top is 9 feet square, the tomb surrounded with eight rings of stone (sunk in the ground) some 7 feet in diameter; it is evidently a chief's grave. In another grave, with smaller slabs and fewer rings round, were the usual pots with bones and beads; the rings contained a skeleton with feet in towards the tomb, the skull placed between the knees. These were the skeletons of slaves that had been sacrificed on the death of a chief, number according to rank. Herodotus describes this ceremony. Mr. Rivett Carnae, in the beginning of 1847, brought to notice the existence of barrows, a little further northward, at the village of Junapani, near Naggur, in which were found articles of pottery, spear and arrow heads, battleaxes, a horse snaffle bit, stirrup-irons, and a small iron model of a bow and arrow.

In the Bengal Asiatic Journal, xiii. p. 618, for 1844, is Colonel Yule's description of the Khassya people of East Bengal, an Indo-Chinese race, who keep cattle but drink no milk, and the sister's son inherits property and rank. They habitually erect dolmens, menhirs, cists, and cromlechs, almost as gigantic in their proportions, and very similar in appearance and construction, to the so-called Druidical remains of western Europe. The undulatory eminences of the country, some 4000 feet to 6000 feet above the level of the sea, are dotted with groups of huge unpolished squared pillars and tabular slabs, supported on three or four rude piers. In one spot, buried in a sand grove, were found a nearly complete circle of menhir, the tallest of which was 30 feet out of the ground, 6 feet broad, and 2 feet 8 inches thick; and in front of each was a dolmen or cromlech of proportionately gigantic pieces of rock, while the largest slab hitherto measured is 32 feet high, 15 feet broad, and 2 feet thick. Several had been very recently erected. The method of obtaining

the blocks, is by cutting grooves, along which fires are lighted, and into which, when heated, cold water is run, which causes the rock to fissure along the groove. The lever and rope are the only mechanical aids used in transporting and erecting the blocks. The objects of their erection are various,—sepulture, marking spots where public events had occurred, etc. The Khassya word for a stone, 'mau,' as commonly occurs in the names of their villages and places, as that of man, maen, and men does in those of Brittany, Wales, Cornwall, etc. Thus Mausmai signifies in Khassya the stone of oath; Mauloo, the stone of salt; Mauflong, the grassy stone, etc.; just as in Wales, Penmaen Mawr signifies the hill of the big stone; and in Brittany a menhir is a standing, and a dolmen a table stone, etc. A cairn of considerable size, on the roadside at the top of the Ajunta ghat, seems to have been a thankoffering for the ascent of the ghat. We added, like the rest of our camp, one stone to the heap.—*Ras Mala, Hindoo Annals*, ii. p. 387; *Dr. Pritchard, Rep. Brit. Ass.* 1847, p. 236; *Colonel Meadows Taylor in J. E. Soc.* 1869; *Dr. Caldwell's Grammar; As. Res.* v. xv.; *Capt. Harkness and Congreve in M. L. S. J.*; *Captain Yule; Beng. As. Soc. Journ.* xiii. p. 619. See Cheda; Cromlech; Ghorband; Tsalai.

CAIRO, the capital of Egypt, in lat. 30° 6' N., and long. 31° 26' E., a very ancient city in the valley of the Nile, and known to the people as Misr. After the conquest of Egypt by Cambyzes (B.C. 525), the Babylonians are said to have founded New Babylon, on the site now occupied by old Cairo. That city, during the Roman occupation, was the headquarters of one of the three legions stationed in Egypt. In A.D. 638 New Babylon was captured by the Arabs, and a new city gradually arose beyond it, which received the name of 'Fastat,' from its having grown up around the tent (fastat) of the Arab general. The modern city was built adjacent to Fastat, in the 12th century A.D., a portion of the stone used in the construction having been obtained from the ancient city of Memphis.

In A.D. 973, the new city, under the title of Misr (al Kahirah, i.e. the Victorious), was constituted the capital of Egypt. The citadel was built in 1116 by the famous Saladin (Salah-ud-Din), who also erected the beautiful aqueduct seen from its walls. Within the walls are the Pasha's palace, the arsenal, mint, and public offices, a mosque, and a well 260 feet deep, known as Joseph's Well. It was not, however, Joseph the son of Jacob who sank it, but a ruler of that name, about A.D. 1100. Under the successors of Salah-ud-Din, Cairo was greatly extended; its magnificence culminated about 1340 A.D.

On the 26th January 1517, the Osmanli sultan, Selim I., entered the city as its conqueror, and thenceforward its history is a blank down to the 22d July 1798, when it was occupied by the French army under Bonaparte. In 1801 the French garrison capitulated to the Turkish army. On the 3d August 1805, Muhammad Ali Pasha took possession of the citadel, which witnessed the massacre, 1st March 1811, of 400 Mameluke Beys, by his orders. Amir Bey alone escaped by leaping the wall. The population is estimated at 400,000, Egyptians, Mahomedans, Copts, Jews, Europeans, and other strangers from the principal

oriental states, but the mass of the population consists of Egypto-Arabian townspeople, of a much more mixed origin than the fellaheen or agricultural population.

CAJAN. MALAY. Fronds of the palmyra and cocoanut palms.

CAJANUS INDICUS. *Spreng.* Pigeon-pea. Of this there are two varieties, which differ only in the colour of the vexillum.

Var. α, with vexillum of a uniform yellow colour on both sides.

<i>Cajanus flavus</i> , <i>De Can.</i>	| <i>Cytisus cajan</i> , <i>Linn.</i>
Dhal, Arhar, . . . BENG.	| Shakhull, . . . PERS.
Pai yen khyung, . . . BURM.	| Adaki, . . . SANSK.
Tuvaray, . . . CAN.	| Kolu, also Velu, of SIMLA.
Dhal, . . . BENG.	| Segapu, Tovaray,
Dangri of . . . GUJ.	| Purpoo, . . . TAM.
Lal Tur, also Dhal, HIND.	| Yerra Kondalu, . . . TEL.
Dhingra Kundi of Kangra.	| Potu Kondalu, . . . "

This is a very valuable pulse.

Var. β, vexillum purplish and veined on the outside, yellow on the inside.

<i>Cajanus bicolor</i> , <i>D. C.</i>	| <i>Cytisus pseudo-cajan</i> , <i>Jacq.</i>
Burru Tur, . . . DUKH.	| Main Tovarai, . . . TAM.
Two-coloured Dhal, ENG.	| Malay Tovarai, . . . "
Hill Doll, . . . "	| Konda Kandulu, . . . TEL.

An excellent pulse, makes a pudding little inferior to that made of peas, and is a particular favourite. When husked and split, it constitutes the kind of dhal which most commonly enters into the formation of the vegetable curry of the Hindu,—moisture, 12.0; nitrogenous matter, 20.1; starchy matter, 63.1; fatty or oily matter, 1.5; mineral constituents (ash), 3.2. This is sown in fields at the commencement of the rains in June, and sometimes much later; it is ripe in December. The seeds are sometimes ground into flour, or split like dry peas; for the latter they are an excellent substitute. It is one of the plants employed in the Bengal Powder-works at Eshapore, in the manufacture of gunpowder charcoal. It might probably be employed in the manufacture of pyroligneous acetic acid. The green pods are cooked in curries. The seeds are separated from the dried pods by beating, and to give a bright colour are mixed with red earth and steeped in water until they germinate. They are then removed, and dried in the sun for two days, and bruised in a mill to break up the seeds, when it is freed from the testa. The cotyledons are now called dhal, which is cooked for curries; also sweet cakes are made from it. Dhal sells at 18 to 24 lbs. for a shilling. The dry leaves and stalks are given to cattle, and the stalks used as thatch.—*Beng. Phar.* p. 235.

CAJAPUTI OIL, Kayaputi, Cajaputi oleum. This oil is obtained from the leaves of the *Melaleuca cajaputi* of Maton and Roxburgh; and it has been said, also from *M. leucodendron*, which is the species known to the people as the kayuputi, literally white wood. Rumphius described two trees, Arbor alba major and Arbor alba minor, and in 1798, Mr. Smith, of the Calcutta Botanic Garden, was sent to the Molucca islands to obtain the true sort of cajaputi plant. He obtained several of each of the trees, and they were distributed over India. Specimens sent to England, were ascertained by Dr. Maton to be those of the *Melaleuca cajaputi*, *Roxb.*, a small tree with an erect but crooked stem, covered with thick, rather soft, light-coloured bark; branches scattered, with slender twigs which droop like

those of the weeping willow. A native of the Molucca islands, especially of Boeroe, Manipe, and of the S. of Borneo. It is called *daunkitsjil*, but also *cajaputi*. The leaves are collected on a warm dry day in autumn, and placed in dry sacks, in which they nevertheless become heated and moist. They are then cut in pieces, macerated in water for a night, and then distilled. Two sackfuls of the leaves yield only about three drachms of the oil. This is clear and limpid, of a light green colour, very volatile, diffusing a powerful odour, having a warm aromatic taste, something resembling that of camphor, followed by a sense of coolness. Sp. gr. 0.914 to 0.927; soluble in alcohol. It boils at 343°. — *Crawford's Dict.*; *O'Sh.*; *Royle*; *Mason*. See *Melaleuca cajaputi*.

CAJU. GUJ., HIND. *Cascaria elliptica*? also HIND., *Anacardium occidentale*. Cashew-nut tree. *Caju ka tel*, the oil from the apple.

CAJUR. HIND. *Phoenix dactylifera*, the date-palm, properly Khajur.

CAKAY. CAN. *Cartartocarpus fistula*.

CALA. SANSK. Time in its natural acceptance; a term applied to a variety of mathematical and astronomical subjects. Cala, in Hindu astronomy, an arc of one minute of a degree; also the phases of the moon, of which the Hindus count 16. Maha Cala, the conjunction or opposition of the sun and moon. See Kala; Yug.

CALABAR SKINS.

Petitgris, FR.	| Vaor, IT.
Grauwerk, GER.	| Bjelka, RUS.
Vajo, IT.	| Gris pequeno, . . . SP.

Siberian squirrel skins, of various colours, used in making muffs, tippets, etc.—*M'Culloch*; *Faulk*.

CALABASH, *Cucurbita lagenaria*, *Linn.*

Hurrea kuddoo, . . . HIND.	| Choory kai, . . . TAM.
Laboo Ambon, . . . MALAY.	| Anapa kaya, . . . TEL.

This is the *Lagenaria vulgaris*, *Ser.* It is of two kinds, the long or Ceylon, and the round; they are good vegetables when young, and are useful when dry as vessels, also as fakirs' bottles, as the sounding drum for the sitar, and as a buoy for swimming across rivers. The New World calabash is the shell of the fruit of *Crescentia cujete*, *L.*, a tree of the West Indies and South America, applied to various domestic purposes, and often carefully carved or painted.—*Rohde*, *MSS.*

CALABASH NUTMEG, *Monodora myristica*, var., of tropical West Africa, bearing globular fruits, 4 to 6 inches in diameter, filled with aromatic seeds. These might, with advantage, be brought to India.

CALABA TREE, *Calophyllum calaba*, *Linn.*

CALACUTA, in Hindu mythology, a poison produced from the churning of the ocean.

CALADANA. HIND. *Pharbitis nil*.

CALADIUM ESCULENTUM. *Willd.*

<i>Colocasia esculenta</i> , <i>Schott.</i>	Ervi, HIND.
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A small bulbous root, sown from March to July in rows of beds, mostly along a watercourse where ginger is planted. It requires much water, and takes from six to seven months to ripen. When boiled and then roasted, it is very wholesome, and somewhat resembles a yam in taste; the natives also put it into curries. It is not liked by Europeans.

CALADIUM XANTHORIZUM. *Smith.*

Kwei-kui, CHIN.	Tuh-kioh-lien, . . . CHIN.
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This Chinese arum has a round irregular bulb, used medicinally.—*Smith.*

CALAH, one of the three cities mentioned in Genesis x. 11, 12 as having been restored by Asshur, son of Shem. B.C. 746, Calah revolted, and Tiglath-Pileser became ruler of Assyria. It has been identified as the modern Nimrud, q.v.

CALA JIRA. HIND. Fennel flower seed.

CALAMANDER WOOD.

Koulou-midrie, . SINGH. | Kalumederiye, . SINGH.
Koulmidrie, . . . | Calamander maram? TAM.

A commercial term applied to the woods of two or three species of *Dalbergia* growing in Ceylon, one of them the *D. quassita*, *Thur.* It is scarce even in Ceylon; it is probably the most beautiful of all fancy woods. The figure is between that of rosewood and zebra-wood; the colour of the ground is usually a rich hazel brown, described as chocolate brown with black stripes. It is hard, and turns well. Mr. Rohde (*MSS.*) met with variegated ebony of rich lustre in logs of ebony cut in the Northern Circular hills, but whether this was owing to the wood being young, or whether the wood was from a distinct tree, he did not know; but there seems no doubt that very many trees yield an ebony.—*Ains. Mat. Med.* p. 211; *M'Culloch*; *Rohde, MSS.*; *Holtzapfel*; *Mendis*; *Ferguson*; *Thwaites*. See *Dalbergia*.

CALAMARIDÆ, the family of dwarf snakes. See *Reptiles*.

CALAMARIES, or Squids, are molluscan animals, of the family *Tentulidæ*, section *Decapoda*. Most of the genera are fossil; but *Loligo* or *Teuthis* has twenty-one recent species, and one of them is luminous at night. See *Mollusca*.

CALAMBAC, Chin-hiang, CHIN., also Calambeg, called aloes-wood, is the agallochum of the ancients, and the agila or eagle-wood of the moderns. It is produced in Siam and Sylhet by *Aquilaria agallocha*.—*Royle, Illustr.* p. 171.

CALAMBUCO, one of the best timber trees of the Philippines. The wood is largely employed in the fabrication of domestic utensils and agricultural implements.—*Crawford, Dic.* p. 79.

CALA MEIN. TAM. *Polynemus Indicus*.

CALAMINE.

Shih-sui-yuen, . . CHIN. | Calamina, . . . LAT.
Carbonate of zinc, ENG. | *Zinci carbonas*, . . .

Rough calamine is prepared for medicinal use by burning; prepared article, usually called oxide of zinc, is often adulterated with sulph. baryta, carbonate of lime, etc.—*Royle*.

CALAMUS. This genus of palm trees is indigenous to Southern Asia, and Dr. Griffiths enumerated 58 species. They abound in the Madras territories, along the foot of the Himalaya from Dehra Doon to Sylhet, in Assam, Chittagong, in the Malay Peninsula, Siam, Cochin-China, Sumatra, and in the Eastern Archipelago. The species are mostly spreading shrubs or small trees, erect, or climbing to a considerable height, or trailing their weak stems several hundred feet along. They furnish the dragon's blood, Malacca canes, and rattans of commerce, some being formed into walking-sticks; some, as the *C. rotang* and others, form the canes or rattans of commerce, of which the people of the Khassya hills make bridges 300 feet long, and those of the Annam hills are formed into long looped ladders. The hard flinty coating of the cane stems are readily split into strips, from which the bottoms of chairs and similar articles are manufactured. It is not, however, possible to say from what particular

species the canes of the shops are obtained, it being probable that many are gathered indiscriminately; *C. rotang* has, however, been said to furnish the stouter, and *C. scipionum* the more slender sorts. But the *C. tenuis* of Assam, *C. gracilis*, *C. extensus*, and others, all furnish the canes of commerce. The stem of *Calamus verus* is described as being 100 feet long, that of *C. oblongus* 300 to 400 feet, of *C. rudentum* upwards of 500 feet, and of *C. extensus* as much as 600 feet. Rumphius even states (vol. v. 100) that one kind attains the extraordinary length of 1200 feet. The cane stem is closely covered over by the tubular bases of the leaves, through which it is drawn by the cane-gatherers when green; afterwards it is dried in the sun, and then is ready for the market. The ground rattan is distinguished by its straight head and altogether straight and stiff character, as well as by its pale colour, some of them are at least an inch in diameter, and others not half that thickness. Some are distinguished by a hard, and others by a soft bark. It is not known whether the slender are of the same species as the thicker kinds, only growing in different situations, or from roots of different ages; but *Rhapis flabelliformis* is said to yield the ground rattan. Another kind of rattan is called dragon cane. This, both light and dark coloured, is thicker than the last, has long internodes and a hard bark, less flexible than the common rattans, but strong, springy, and much valued. A variety, with soft bark, is called Manilla dragon cane. Other kinds of canes, imported from China, are known, one with stiff stems and large knots, by the name of Jambee, another as Whangee. This has a pale, hard bark, and flexible stems, with internodes of about an inch and a half or two inches, and a number of little holes at the knots. Some of the canes of commerce, however, are produced by species of *bambusa*, *saccharum*, and other grasses. The flesh that surrounds the seeds of this genus is a delicate article of food; limpid water flows from the stems when cut through; and the young shoots of some of them, while still tender, are fritted or boiled, chopped small, and, being fried with pepper and gravy, are said to furnish a very delicate dish. One of the kinds of dragon's blood or jurnang is the produce of species of *calamus*; and those which chiefly yield it are the *C. petraeus*, *Lour.*, *C. rudentum*, *Lour.*, *C. verus*, *Lour.*, and *C. draco*, *Willd.*, of which the last three were by Linnaeus reckoned mere varieties of *C. rotang*. Mr. Gamble names 39 species.

Calamus arborescens, *Griff.*, is an arboreal species of rattan common in the Burma jungles. Griffith justly terms it 'a very elegant palm.'

Calamus draco, *Willd.*

Dam-ul-Akhwain, ARAB. | Rotan-jarnang, . MALAY.
Ky-ying-ni, . . . BURM. | Kanda-murga-rattam,
Tu-tang, Koh-liu, . CHIN. | TAM.

This grows in Burma, the Malay Peninsula, Sumatra, and the Eastern Archipelago, and is said to be the species which, as a natural secretion of its fruit, yields the best d'jurnang or dragon's blood, an article of commerce from the earliest times, and still in demand. In the forest of Tenasserim, the natives call it 'red rattan,' as it produces a red exudation like dragon's blood. It is little known in the Peninsula of India. The plants when young are elegant, and resemble small palm trees, after which they become scandent,

and overrun any neighbouring trees. The fruits are fleshy, red, and astringent. Dragon's blood is of more importance in the arts than in medicine, being chiefly used as an ingredient in varnishes and paints. In commerce it occurs in powder, grains, masses, drops the size of an olive, and in sticks, enveloped in the leaf of the talipot palm.

Calamus erectus, *Roxb.* Its seeds are used as a substitute for betel-nut.

Calamus extensus, *Roxb.*, Nela poka, TEL. Its seeds are used for betel-nut. See Canes.

Calamus fasciculatus, *Roxb.* Rattan cane. Buro-bet, . . . BENG. | Parambu, . . . TAM. Perambu, . . . MALEAL. | Amla Vetasawmu, TEL.

This cane is a native of Bengal, used for walking-sticks.

Calamus inermis, *T. And.*, furnishes the finest alpenstocks.

Calamus latifolius, *Roxb.*, of Chittagong, Burma, and the Andamans, is used for tying timber rafts, and to make cables.

Calamus montanus, *T. And.*, of Sikhim and Bhutan, is the best cane for suspension bridges and for dragging logs.

Calamus rotang, *Linn.* Rattan cane.

C. Roxburghii, *Griff.*, *Royle*.

Bet, Beta, . . . BENG.	Betamu, Bettapu, TEL.
Rotan, . . . MALAY.	Niru Prabba, Pemu, "
Bel, . . . PERS.	Pepu, . . . "
Perambu, . . . TAM.	

This species of calamus is said to furnish the stouter of the rattan canes of commerce, which are readily split into strips, are extensively used for the caning in the backs and bottoms of chairs, sofas, and light carriages; are made into matting, seats, sofas, baskets, and cabinets; and throughout the Archipelago vessels are furnished with cables formed of cane twisted or plaited. They are likewise formed into ropes by the people of the forests, to drag heavy weights and to bind wild elephants. The kinds employed for caning chairs, etc., are known in commerce by the name of rattan cane, and are yielded by long trailing species which abound wherever the genus is found. The most northern one, *Calamus Royleanus*, no doubt yields the rattans collected in the Dehra Doon, while *C. Roxburghii* doubtless yields those collected in more southern latitudes. Dragon cane is thick, both light and dark coloured, with long internodes and a hard bark, less flexible than the common rattans, but strong, springy, and much valued. *C. Royleanus*, *C. rotang*, common in Bengal and on the Coromandel coast, are used for all the ordinary purposes of cane; as also are *C. tenuis* of Assam, *gracilis*, *extensus*, and others. Canes form a considerable article of commerce. Between four and five millions of them have been exported from the East Indies. Dampier says: 'Here we made two new cables of rattans, each of them four inches about. Our captain bought the rattans, and hired a Chinese to work them, who was very expert in making such wooden cables. These cables I found serviceable enough after, in mooring the vessel with either of them; for when I carried out the anchor, the cable, being thrown out after me, swam like cork in the sea, so that I could see when it was tight, which we cannot so well discern in our hemp cables, whose weight sinks them down, nor can we carry them out but by placing two or three boats at some distance asunder, to buoy up the cable, while the long boat rows out the anchor.' The tow-ropes men-

tioned by Marco Polo as used by the Chinese for tracking their vessels on their numerous rivers and canals, seem also to have been made of cane, and not of bamboo, as sometimes stated, as they were split in their whole length of about thirty feet, and then twisted together into strong ropes some hundred feet in length. In Java, Sumatra, and throughout the eastern islands, vessels are furnished with cables formed of cane twisted or plaited. This sort of cable was very extensively manufactured at Malacca.

Mr. G. Bennet says (*Wanderings*, ii. p. 121) that near Macao the rattans are split longitudinally, soaked, and attached to a wheel, which one person keeps in motion, whilst another binds the split rattans together, adding others to the length from a quantity carried around his waist, until the required length of the rope is completed.

Calamus Royleanus, *Griff.*, the most northern of the canes, being found in the Dehra Doon, where it abounds. Plentiful in the eastern Kamaon forests, and used in all cane-work.

Calamus rudentum, *Loureiro*, grows on the Malhabaleswar hills and Dekhan, also in Cochinchina and the Moluccas. *Loureiro* describes this large species as being twisted into ropes in the eastern regions, and employed, among other purposes, for dragging great weights, and for binding untamed elephants.

Calamus scipionem, *Loureiro*. Griffith considered this to be the species which yields the Malacca cane, but the plant does not appear about Malacca. He was, however, informed that the canes are imported from Siak, on the opposite coast of Sumatra. Some of these are simply mottled or clouded, others of a brown colour, in consequence, it is said, of their having been smoked. The more slender specimens with the longest internodes are those most highly valued.

Calamus vininalis, *Ainslie*.

Bet, . . . DUKH.	Perupum, . . . TAM.
Vetra, . . . SANSE.	Betta, . . . TEL.

It grows in the woods, and its fruit is eaten by the common people.—*Roxb.*; *Griffith*; *Seeman*; *Voigt*; *Royle*, *Fib. Pl.*; *Mason*; *O'Sh.*; *Bennet*; *Thompson*; *Ainslie*, p. 231; *Gamble*.

CALANDRA GRANARIA.

Ch'heda, Ghun, . HIND. | Makora, . . . HIND.

A weevil very destructive to grain. It is one of the insects styled goon by the people. See Insects.

CALANOS, a Brahman who accompanied Alexander the Great into Western Asia. He was an old man upwards of 80, and went along with Alexander through Gedrosia, the modern Makran. But at Pasargada, in Persia, he fell sick, and ended his life by immolating himself on a pile. According to Plutarch, his real name was Sphones. His native country was on the banks of the river Camala.—*Cal. Rev.* See Zarmano Chegass.

CALAPA. MALAY. Coconut palm. From this is derived the old word for the cocconut, calaper, still usual amongst sailors.

CALAPNATH. HIND. *Andrographis paniculata*.

CALASTRI or Kalahasti is a zamindari estate in the Madras district of North Arcot, Madras. The town, in lat. 13° 45' N., and long. 79° 44' E., is the principal town of a Hindu chief known as the raja of Calastri.

CALCAREOUS SPAR. Calc-spar.

Ying-shwui-shih, . CHIN.	Han-shwui-shih, . CHIN.
Peh-shwui-shih, . "	Safed surma, . . HIND.

The varieties of this mineral are calc-spar, Iceland spar, satin spar, chalk, rock milk, calcareous tufa, stalactite, stalagmite, limestone, oolite, pisolite, argentine, Fontainebleau limestone, white and clouded marbles, statuary marble, compact limestone, stinkstone, anthraconite, plumbo calcite, mineral agarie. Calcareous spar is used in India medicinally, and they call it white antimony, probably from its rhombohedral fracture resembling that of galena, which is usually employed in lieu of antimony; and natives use this also for the eyes, just as they do sulphide of antimony. At Sankerydroog, 25 miles S.W. of Salem, a great quantity of calcareous spar is burnt and sent to Salem and other parts, for eating with betel, as betel-eaters hold it in esteem. It requires a much greater heat than the ordinary kinds of limestone, and is generally burnt in small circular kilns with a jungle shrub, which gives out a great heat. When burnt it is much whiter than ordinary chunam, takes a most beautiful polish, and is much used for the last coat of plaster in houses, etc., giving the appearance of the whitest marble when polished. It occurs also at Masulipatam and in Travancore; rhomb spar at Nellore, and satin spar, or fibrous carbonate of lime, in the Hyderabad territory. Calcium is estimated to constitute one-fourth part, by weight, of the materials of which the earth consists. The importance of the uses of the compounds corresponds with the abundance of the element itself. But for the use of calcium in separating iron from ore, iron would not occupy the important position it does. Its compounds form ranges of mountains, coral islands, and chalk cliffs. There are few industries which do not depend in some way upon it in the form of carbonate of lime, as limestone, chalk, marble, calc-spar, and shells.

Calcined shells, Poh-fen and Hai-koh-fen of the Chinese, when finely powdered, are used in China as a face powder, or for dusting sores. The famed polished wall plaster of the Madras houses is made of lime prepared from calcined shells dredged from the neighbouring Pulicat lake. See Chunam.

Calcis carbonas, Chalk, Carbonate of lime.

Kila,	ARAB.	Karrimatti,	HIND.
H'toung h'pyu,	BURM.	Kapur ingria,	MALAY.
Craie,	FR.	Gil safed,	PEBS.
Kohlensaurer kalk,	GER.	Simi chundambu,	TAM.
Valaiti chuna,	HIND.		

Chalk is only seen as an article of import into India. The Hindustani, Malay, and Tamil names describe it as foreign lime. It is used in households; but the bones of vertebrata, a large part of the shells of testaceous mollusca, of crustacea, corals, oyster shells, crab's claws, crab's eyes, as they are called, are all employed in eastern countries medicinally, as also the lapis judaicus, which is the spine of fossil echinus. All consist of pure carbonate of lime, with some animal matter intimately intermixed.—*Royle*.

CALCULUS CYSTICUS, bezoar.

Hajr-ul-Bakir,	ARAB.	Gauzereh,	PEBS.
Gairun,	DUKH.	Gorochana,	SANSK.
Biliary calculus,	ENG.	Koroshanam,	TAM.

Biliary concretions occasionally found in the gall bladders of horned cattle in India. They are generally contained in a little bag, which holds two or three small calculi, each about the size of a tamarind stone, or one large one as big as a

marble. They are of a bright yellow colour, and are considered by native practitioners as highly valuable in certain indispositions of young children, owing to their cordial and alexipharmic qualities. A piece about the bigness of a mustard seed is commonly given for a dose to a babe of two months old, in conjunction with an infusion of omum or siragum. This substance is also used, together with kadukai and machakai, in preparing a mixture for cleansing the inside of the mouths of new-born infants. The Vyteans prescribe a solution of it in warm ghi, to be poured up the nose in cases of nervous headache; and they administer it, too, in doshum (typhus fever), made into a draught with woman's milk.—*Ains. Mat. Med.* p. 85. See Bezoar; Gall Stones.

CALCUTTA, in lat. 22° 34' 2" N., long. 88° 23' 59" E., at the cistern of the barometer at the Surveyor-General's office, is 18 feet (G. T. S.) above the sea. It is the capital of British India, built on the left or eastern bank of the Hoogly river. It is a place of great trade, and has a mint, a cathedral, a governor's house, a fortress, a town hall, great hospitals, schools and colleges, a botanical garden, custom office, high court, and public monuments to Sir David Ochterlony, Warren Hastings, Wellesley, Cornwallis, Outram, and others. The name is from Kalika (Kali, and āt), to move, also said to be from Kali Kota, and it was the first concession to the British in that part of India. It was, when they obtained it, only a miserable village known also as Kali Ghat, of which also some believe its present name is a corruption. It is about 80 miles from the Bay of Bengal. On the 18th June 1756, it was taken by Suraj-ud-Dowla. Messrs. Drake and Minchin had made their escape along with the women and children, but Mr. Holwell held out for forty-eight hours longer, and he and 146 of the people were then imprisoned in a small guard-room, about 20 feet square, and on the following morning only twenty-three issued alive. The guard-room was thenceforward known as the Black Hole of Calcutta. In January 1757 it was recovered by a detachment from Madras under Admirals Watson and Clive, and the treaty of Calcutta was agreed to on the 9th February 1757. The population greatly increased:—

1710,	10,000 to 12,000
1752. Mr. Holwell's estimate,	409,056
1814. By Sir E. Hyde East,	700,000
1821. By Town Assessors,	179,917
1821. By Calcutta Magistrates,	230,552
1831. By Captain Steel, Superint. of Police,	187,081
1837. By Captain F. W. Birch, do. do.,	229,714
1850. By Mr. Simms, Surveyor of Calcutta,	361,369
1866. By the Justice of the Police,	377,924
1872. In the Census of Lower Bengal,	429,535
1881,	684,658

In 1686 the English merchants quitted Hugli and occupied the three river-side hamlets, Sutanati, Kalikata, and Govindpur, where in 1696 they erected the original Fort William, and in 1700 they formally purchased the site from prince Azim, son or grandson of Alamgir I. Between 1752 and 1773, the present fortress was constructed, at a cost of two krors, and the natives gathered around it. After the battle of Plassey, a mint was established, and the first coin was issued on the 19th August 1757. In 1797 it was declared a presidency. The town has a European and a native portion; and until the latter half of the 19th century, its insanatory condition was con-

stantly exposed. There are now several colleges, medical schools, and hospitals. In 1873 the death-rate was 25·82 per 1000. It has several times suffered from cyclones; those of 5th October 1864 and 2d November 1867 caused great damage to the houses and to the shipping.

Calcutta municipality exercises jurisdiction over seven square miles. The Mahratta Ditch, around Calcutta, was excavated by the natives in the middle of the 18th century, as a protection against Mahratta inroads. Calcutta has been the nurse of many able statesmen, learned men, and philosophers,—Warren Hastings, Sir John Shore, Sir William Jones, Drs. John Borthwick Gilchrist, Horace Hayman Wilson, Francis Balfour, N. Wallich, Sir W. O'Shaughnessy, Buchanan, Lord Dalhousie, and Lord Canning, Mr. Carey, Mr. Marshman, and James Prinsep.—*Imp. Gaz.*

CALDANI, a body of Christians in Kurdistan who use the Syrian language in their liturgy.—*De Bode*. See Kuldi.

CALDERA BUSH, Screw pine.

Talam, TAM. | Mogili, TEL.

This is the *Pandanus odoratissimus*, *Lim.*, which was brought into India from the Mauritius. Its leaves are valuable for making soft matting; the droops from the stem are a mass of tolerably fine fibres, and the ends, beaten out, are used by plasterers for brushes; the fibre is used for lines and cordage; and the plant itself makes good fences near the sea, but it soon becomes straggling.—*Rohde, MSS.*

CALDOORTY, in Travancore, 700 feet above the sea, has a rainfall of 150 to 200 inches. Tea is grown there.

CALDWELL, The Rev. Dr. R., during the latter half of the 19th century a missionary for Christianity in the south of peninsular India; author of the Comparative Grammar of the Dravidian Languages, and On the Shanar Race. His success in conversions was great, and he was created a bishop of the English Church.

CALEMBERI. SINGH. Coromandel or calamander wood.

CALENDAR. Nations have adopted different divisions of time, from which history has presented difficulties and contradictions. That of the Chaldeans was seen by Callisthenes, the favourite of Alexander. It commenced B.C. 2234. The Chinese calendar was reformed under the Han dynasty, B.C. 991.

The Romans called the first day of each month *Calend*, from a word which signified 'called,' because the pontiffs on those days summoned the people together, to apprise them of the days of festival in that month. The Roman calendar is stated to have been introduced by Romulus, the founder of Rome. He divided the year into ten months only,—*Mars*, *Aprilis*, *Maius*, *Junius*, *Quintilis* (afterwards called *Julius*), *Sextilis* (afterwards called *Augustus*), *September*, *October*, *November*, and *December*. *Mars*, *Maius*, *Quintilis*, and *October* contained 31 days, and each of the six other months 30 days, so that the ten months comprised 304 days. The year of Romulus was therefore of 50 days' less duration than the lunar year, and of 61 days less than the solar year.

Numa Pompilius placed two months, *Januarius* and *Februarius*, before *Mars*. Julius Cæsar consulted the astronomers of his time, and fixed the solar year as 365 days 6 hours, comprising, as they

thought, the period from one vernal equinox to another. The six hours were set aside, and at the end of four years forming a day, the fourth year was made to consist of 366 days. The day thus added was called *intercalary*, and was added to the month of February, by doubling the 24th of that month, or, according to their way of reckoning, the sixth of the calends of March. Hence the year was called *bissextile*. This almost perfect arrangement, which was denominated the Julian style, prevailed generally throughout the Christian world till the time of Pope Gregory XIII. The calendar of Julius Cæsar was defective in this particular, that the solar year, consisting of 365 days 5 hours and 49 minutes, and not of 365 days 6 hours, as was supposed in the time of Julius Cæsar, there was a difference between the apparent year and the real year of 11 minutes. This difference at the time of Gregory XIII. had amounted to ten entire days, the vernal equinox falling on the 11th instead of the 21st of March, at which period it fell correctly at the time of the Council of Nice in the year 325. To obviate this inconvenience, Gregory, in 1582, ordained that the 15th of October should be counted instead of the 5th for the future.

The solar, i.e. really the sidereal year, called the *Shuboor Sun*, or vulgarly the *Soor Sun*, that is, the year of (Arabic) months, was apparently introduced into the Dekhan by Taghalaq Shah, between A.C. 1341 and 1344, and it is still used by the Mahrattas in all their more important documents, the dates being inserted in Arabic words written in Mahratti characters. The *Fasli* or 'harvest' year of other parts of India was not introduced until the reign of Akbar and Shah Jahan, and they mostly continue to this day to be used even by the British in revenue accounts.—*History of the Sikhs*; *Captain Cunningham*, p. 34; *Bunsen*, ii. pp. 402, 442; *T. of Ind. Cal.* See *Era*.

CALENDERING. *Mora*, TEL. A term said to be corrupted from *cylindering*, cotton or linen goods being passed between cylinders or rollers, and made of a level and uniform surface. In India, an appearance similar to that produced by *calendering* is given to goods, particularly to such chintzes as were intended for the Persian market, by beating them, and then rubbing them on a board with a shell slightly waxed. The texture is no doubt injured by it. The coarse cloths formerly largely exported, were beaten with a heavy block on a log of wood, before being made up in bales.—*Rohde, MSS.*

CALENDRELLA BRACHYDACTYLA, the *Alauda brachydaactyla*, or short-toed lark of S. Europe, N. Africa; rare in Britain; extremely common in India, where it is currently known to Europeans as the *ortolan*.

CALF. As the *Basava* and *Nandi* of the Hindus, the brazen calf mentioned in Scripture as an object of worship by the Hebrews is still worshipped by Hindus in India. It is rarely if ever of wood, is often of brass, but oftener of stone. See *Bull*, *Lingam*; *Nandi*.

CALI, the *Diana Taurica* of Greece. See *Kali*.

CALI, in Hinduism, the expected tenth incarnation of Vishnu in the shape of a white horse with a human head. See *Kali*.

CALICHI-KAI. TAM. Bonduc nut; *Cæsalpinia bonducella*.

CALICO.

Kattun,	DAN.	Pano de Algodao, . .	PORT.
Katuen,	DUT.	Wuboiika,	RUS.
Toile de coton; Coton, .	FR.	Tela de Algodon, . .	SP.
Kapra,	HIND.	Cattun,	SW.
Bombagina; Tela, . .	IT.	Tuni,	TAM.
Kayin-Kapas,	MALAY.	Gud'da,	TEL.
Bawelniki,	POL.		

Cotton cloth, originally manufactured at Calicut on the Malabar coast, still largely made in India, but much of that used is brought from Britain. Arrian (i. 539) speaks of the beautiful white lineens of India, probably the same with the modern calicoes. These formed, as they do at present, a great part of the people's clothing.

CALICOIL, a stronghold of the raja of the Kollari race, now ruled by the Pudukottah raja.

CALICO PRINTING. This art was common to the Egyptians and the Hindus, and is still largely practised by the latter, with a skill which produces much to be admired, even in the midst of the productions of the world, and after so many attempts have been made to improve this art, certainly imported from the East. Pliny was acquainted with the wonderful art by which cloths, though immersed in a heated dyeing liquor of one uniform colour, came out tinged with different colours, which afterwards could not be discharged by washing. The people of India apply the mordants both by pencils and by engraved blocks. The cloth-printers at Dacca stamp the figures on cloth which is to be embroidered. The stamps are formed of small blocks of kantul (artocarpus) wood, with the figures carved in relief. The colouring matter is a red earth imported from Bombay, probably the so-called 'Indian earth' from the Persian Gulf. Though the art is now practised to much perfection in Britain, Indian patterns still retain their own particular beauties, and command a crowd of admirers. This is no doubt due in a great measure to the knowledge which they have of the effect of colours, and the proportions which they preserve between the ground and the pattern, by which a good effect is procured both at a distance and on a near inspection. Printing in gold and in silver is a branch of the art which has been carried to great perfection in India, as well upon thick calico as upon fine muslin. The size which is used is not mentioned, but in the Burmese territory the juice of a plant is used, which no doubt contains caoutchouc in a state of solution.—*Royle, Arts, etc., of India*, p. 483; *Pennant's Hindoostan*, i. p. 132; *McCulloch's Commercial Dictionary*, p. 215.

CALICUT, a seaport town on the Malabar coast, in lat. 11° 15' 2" N., long. 75° 15½' E., and six miles N. of Beypur. It is not visible from the ocean, the only building to be seen being a tall white lighthouse. Thick groves of cocoanut trees line the shore, and are divided from the sea by a belt of sand, while undulating green hills rise up behind, and a background of mountains is often hidden by banks of clouds. The name is from Colicodu or Colikukaga, a cock crowing, as Cheruman Permal gave his sword, and all the land within cockerow of a small temple, to the Zamorin, or raja of Calicut, who attained considerable power in the 15th century. Pedro da Covilham, the Portuguese, landed here about 1486, Vasco da Gama in 1498; in 1501 Alvarez Cabral established a factory here, but the colony was massacred, which Da Gama revenged, and in 1510

Albuquerque burnt the Zamorin's palace. The Danish Government established a factory in 1752. In 1766, when Hyder Ali invaded Malabar, the Zamorin shut himself up in his palace and set fire to it, dying with his family in the flames. It has been repeatedly in the hands of the Portuguese, Dutch, French, British, and Mysoreans, and in 1817 it was restored with Mahe to the French. Tipu Sultan destroyed its flourishing trade, expelled from the country the merchants and factors of the foreign commercial houses, caused the cocoanut and sandal trees to be cut down, and ordered the pepper plants in the whole surrounding district to be torn up and hacked to pieces, because these plants, as he said, brought riches to the Europeans, and enabled them to carry on war against the Indians. Besides cocoanut products, coffee, pepper, cardamoms, ginger, cocculus Indicus, gingelly seed, turmeric, arrowroot, croton seeds, and terra japonica form articles of export. There are many of the Tiar and 15,837 of the Moplah race in the Calicut district. The population in 1871 was 48,338, of whom 11,983, or 33 per cent., were Shanars, or toddy drawers from the palms.—*Imp. Gaz.*; *Horsburgh; Bartolomeo's Voyage*.

CALICUT MANCHE, a trading ship of the western coast of India. See Boat.

CALIF, from the Arabic khalfah, a vicegerent, was the title assumed by the Mahomedan rulers at Baghdad, of whom the first after Mahomed were Abubakr, Umar, Usman, and Ali. Under the Abbas dynasty they attained to great power. In Central Asia, the sultan at Constantinople is even now by most sunni called the Khalif of Rum. They claim that this dignified position was granted to Selim I. by a descendant of Ahmad; and it is through Ahmad and Mutawakkal B'illah that they claim to have had transferred the right to the office of khalif of Islam. It is, however, an elective office. See Khalif.

CALI-KASTURI. BENG. Abelmoschus moschatus.

CALIMERE POINT, a cape or promontory in the Tanjore collectorate, the Caligicum of Ptolemy, in lat. 10° 17' N., long. 79° 56' E., the most southerly point on the Coromandel coast. Two pagodas near each other, are about a mile from the shore.—*Imp. Gaz.*

CALI-NADI. The boundary between Dehli and Kanouj was the Cali-nadi, or black stream,—the Calindi of the Greek geographers.—*Tod's Rajasthan*, ii. p. 9.

CALINGA, an ancient kingdom on the eastern coast of the Peninsula of India, at its upper end. The dynasty ruled at Rajamundry and in the Northern Circars. The meaning of the word is a country abounding with creeks. The town of Kalingapatam alone remains to indicate the rule of that dynasty; but the term Kling or Kalen of Burma, and the Hindu religion of the Javanese, seem to have come from them.

Kalingapatam is in lat. 18° 20' N., long. 84° 10' E., a seaport town on the right bank of the Vomshudara river, 15 miles N. of Chicacole. It is in the Ganjam district. Under Mahomedan rule it was a trading port of consequence, and the remains of a large town are still to be seen. There is good anchorage. The exports are rice, wheat, oil-seeds, grain, hides, timber, beeswax.

CALINGULA. TAM. A sluice, a weir, or

waterway, constructed in the bunds or dams of tanks to permit the escape of surplus water, and thus guard against the accumulating waters overflowing the softer parts of the dam.

CALI-SIND. This river comes from Rangri, and its petty branch, the Sodwia, from Raghubur. There are four rivers in India called Sind,—first the Sind or Indus; the Little Sind; the Cali Sind, or black river; and the Sind rising at Latoti, on the plateau west and above Seronge.

CALI YUGA. See Yuga.

CALLAGOUK ISLAND, lat. 15° 34' 12" N., long. 97° 38' E., in the opening of the Gulf of Martaban, is a small granite island rising about 150 feet above the sea, with few trees, and with a small skirting shore with indenting bay, in which mangroves grow. It has also the name of Curlew Island. Stones for the lighthouse at Cape Negrais were quarried here.

CALLIAN, the Kalliaira of the Periplus, a town near Bombay. It has all around an extensive series of Buddhist caves, one or two chaitya or waggon-vaulted caves, with the daghopa; also vihara or monasteries, hermitages, vaulted reservoirs for water. The identity of Callian with Kalliaira has been disputed, but is generally recognised, as it is mentioned by Cosmas, who was only acquainted with the western coast of the Peninsula.

CALLIANDRA CYNOMETROIDES. *Bedd.* An interesting tree growing on the Tinnevely and Travancore mountains at 2500 feet elevation, in the dense, moist forest not far from Courtallum. It is in flower and ripens its fruit in November. Its timber is very good.—*Beddome.* See Inga.

CALLICARPA, a genus of plants of the order Verbenaceæ. Roxburgh described eleven species,—*acuminata*, *Americana*, *arbores*, *cuspidata*, *incana*, *lanata*, *longifolia*, *macrophylla*, *lanceolaria*, *pentandra*, and *purpurea*.

C. Arbores, *Roxb.* i. 390, a stout, tall tree of Nepal, Kamaon, Oudh, the Morung mountains, Goalpara, Chittagong, and Moulemein.

C. Incana, *Roxb.* i. 393.

Mashandari, . . . BENG.	Bannu, . . . JH.
Muttura; Muttranja, . . .	Sumali, . . . CHEN.
P'attharman; B'a-puttra, JH.	Dentbur; Druss, . . RAV.

Grows in the Panjab.—*Voigt*; *J. L. Stewart.*

C. Lanata, *Linn.*

Callicarpa cana, <i>Linn.</i>	Callicarpa Americana, <i>Lour.</i>
„ <i>toimentosa</i> , <i>Lam.</i>	
Mashandari, . . . BENG.	Tondi; Teregam, <i>MALEAL.</i>
Aroosha fibre of Chittagong	Kat Komul, . . . TAM.
Bastra, . . . HIND.	

This plant is recommended by Dr. Royle for the fibre of its inner bark, Thondy nar. O'Shaughnessy says it is bitterish, and rather aromatic.

C. Wallichiana, *Walp.*, a very small tree of the western forests generally.—*Royle*, *F. Pl.* p. 310; *O'Sh.* p. 456.

CALLICHOUS CHECHRA. *B. Ham.* The butter fish of the rivers of India.

CALLIGONUM POLYGONOIDES. *Linn.*

Balanja, . . . TRANS-INDUS.	Flowers—Phogally.
Berwaja, . . .	Root—Tirni.
Phok or Phog, "Cis-INDUS.	

The shoots of this moderately-sized shrub are greedily eaten by goats and camels; the wood is used as fuel; and in Bikanir the twigs are much used for huts and for linings of shallow wells. In the Cis-Sutlej and Southern Panjab, the fallen

flowers are used as largely as in Muzaffargurh for food; they are made into bread, or are cooked with ghi, and eaten as a relish.—*Stewart*; *Powell.*

CALLINICUS, a surname of the second Seleucus, B.C. 246, and the fourth of the Syrian rulers after Alexander. See Greeks.

CALLIOPSIS, a genus of flowering plants, esteemed in India. In sowing, dig and pulverize 18 inches deep; give abundance of manure. Water before sowing; sow thinly, and press, and cover with fine sand.—*Riddell.*

CALLISTEPHUS CHINENSIS. *Cass.* Chinese star. Several other species are named by Voigt as having been grown near Calcutta.—*Voigt.*

CALLISTHENES, as the friend of Alexander, was permitted access to the Babylonish records. It is stated in the Dabistan, that Callisthenes sent to his uncle a technical system of logic (Nyaya), which was the basis of the Aristotelian system. See Babylon; Calendar.

CALLITRIS QUADRIVALVIS. *Vent.*

Thuja articulata, *Desf.* | Jointed Arbor vitæ, *ENG.*

The plant coppices readily, and is largely used for fuel; its roots furnish the beautifully-grained Citrus wood for ornamental work. It produces the juniper resin or sandarach of commerce.

CALLOCEPHALON GALEATUM, the Ganga cockatoo of Australia.

CALLUCA, an ancient commentator of the Vedas. His era is not known, but he lived at a time when the religious views were on the change.

CALNEH, an ancient town, on the site of which it is supposed that Ctesiphon was built.

CALOE or Caloe. *SUMATRAN.* The Rhee, China grass, *Boehmeria nivea*.

CALOENAS NICOBARICUS, the Nicobar pigeon, is of great size and splendour. Its appearance and habits exhibit a near approach to the gallinaceous birds. It lives chiefly on the ground, runs with great swiftness, and flies up into a tree when disturbed. Its nest is of the rude platform construction usual among the pigeon family. Eggs are white.—*Macgillivray's Voyage*, i. p. 244; *Jerdon.*

CALOMEL, the Shwui-yin-fen and Hung-fen-king-fen of the Chinese. A chloride of mercury used in medicine by European and native medical practitioners. It is known in India as *laskapur*, but this is rarely free from soluble corrosive sublimate, which is often present in poisonous proportions, unfitting such for medicinal use. It is largely made by the Chinese.—*Powell.*

CALONYCTION GRANDIFLORUM. *Choisy.*

Convolvulus latiflorus, <i>Desr.</i>	Ipomœa latiflora, <i>Rom. and Schult.</i>
<i>C. grandiflorus</i> , <i>Linn.</i>	

Moon flower, . . . ENG.	Naga-mughatei, . . TAM.
Munda valli, . . . MALEAL.	Vuludambu, . . . TEL.
Alanga, . . . SINGH.	Naga-rama-katti, . . TEL.

This beautiful creeper was introduced into the East, from the West Indies. Its large pure white blossoms open at sunset and fade at daylight. Its seeds, when young, are eaten.—*O'Sh.*

CALONYCTION ROXBURGHII. *G. Don.*

Ipomœa grandiflora, *Roxb.*, *Rheede.*

Nway-ka-zwoon a phyoo, . . . BURM.	Chandnee, . . . HIND.
	Panditti vankaia, . . TEL.

A large-flowered species, whose snowy blossoms

open at sunset and shut at daylight. It is sometimes carried over arbours and pandals. It is

'The white moon-flower, such as shows
On Serendib's high crags to those
Who near the isle at evening sail,
Scenting her clove trees in the gale.'—Mason.

CALONYCTION SPECIOSUM. Choisy.

Ipomœa bona nox, Linn. | Munda Valli, Van Rheede.

This species is seen in European gardens.

CALOPHYLLUM (from the Greek Kalos, beautiful, and Phyllon, a leaf), a genus of plants belonging to the natural order Garciniaceæ. *C. angustifolium*, *inophyllum*, and *tacamahaca*, grow in S.E. Asia; but in Southern India several species have not as yet been determined. They furnish useful timber.—*C. angustifolium* yielding one of the poon spars of commerce, and *C. calaba*, the East Indian *tacamahaca*, though *C. inophyllum* is also quoted as the *tacamahaca* tree. In Tenasserim the house carpenters often use the timber of a species of *calophyllum*, which also furnishes spars. A species of the Poona marum is a large tree common in the Western Ghats of peninsular India. Its wood is much used in house, and to some extent in ship building. *C. angustifolium* grows in Penang; *C. Blumii*, Wight, in Java; *C. Burmanni*, in Ceylon; *C. decipiens*, in Travancore; *C. longifolium*, in Bombay; *C. Moonii*, in Ceylon; *C. polyanthum*, Wall., in the Khasya mountains; *C. tacamahaca*, in Madagascar and the Seychelles; *C. tomentosum*, Wight, in Ceylon. *C. amœnum*, Wall., is a timber tree of the Andaman Islands. *C. bintagor* grows in the Moluccas. *C. bracteatum*, Thw., a great tree growing in the Saffragam district of Ceylon by the sides of streams, at no great elevation. *C. Burmanni*, Wight, *Illustr.* i. 129, grows in the hotter parts of the island of Ceylon, and at no great elevation. *C. cuneifolium*, Thw., a great tree, grows in Ceylon at an elevation of 3000 to 4000 feet at Madamahane-wera. *C. Moonii*, Wight, *Illustr.* i. 129, Dombakeena-gass, SINGH., a great tree of the Ceylon forests, in the district between Galle and Ratnapura; not uncommon. *C. tomentosum*, Wight, *Illustr.* i. 128, Keena tel, SINGH., is a tree of Ceylon, growing abundantly in the Central Provinces, at an elevation of 3000 to 5000 feet; common; its timber is valued for building purposes; and the seeds are collected in considerable quantities for the oil they contain. *C. trapezifolium*, Thw., a great tree of Ceylon in the Hunasgiri district, in the Central Provinces, growing at an elevation of 4000 to 5000 feet. *C. Walkerii*, Wight, *Illustr.* i., a tree of Newera Ellia, Adam's Peak, and other of the most elevated parts of Ceylon. An oil is extracted from the seeds of this and the other species of the genus, which is used for burning.—*Thur. Enum. Pl. Zeyl.* i. p. 51; Choisy; Roxb.; Voigt; Mason; Gamble.

CALOPHYLLUM ACUMINATUM. Wal-dombe, SINGH. A tree of the western parts of Ceylon, the timber of which is used for common house-building purposes. A cubic foot weighs 39 pounds. It lasts 20 years.—*Mr. Mendis*.

CALOPHYLLUM ANGUSTIFOLIUM, Roxburgh, is said to be a tree of Penang, and to occur also in Coorg, Mysore, Canara, and along the ghats, northwards to Sawuntwari, but rarely of any great size beyond the line of the Nilcond ghat. It is here that, according to Dr. Cleghorn, poon spars are obtained from this tree. Dr. Gibson

also says that, to the best of his knowledge, poon spars are furnished by *Calophyllum angustifolium*, which is a magnificent tree in the ravines of the Southern Ghats. In habit and appearance it is totally distinct from *C. inophyllum*. He says that it is from the inland forests of Canara, backed as these are by those of Coorg to the east, that the supply of poon spars is principally drawn. In 1850 Dr. Wight was satisfied that *Dillenia pentagynia* is a tree which furnishes poon spars.—*Drs. Gibson, Cleghorn, and Wight*; *Mr. Rohde's MSS.*; *Dr. Roxburgh*; *Tredgold*; *Markham*, p. 452. See Poon.

CALOPHYLLUM CALABA. Linn. Calaba tree.

<i>C. spurium</i> , Choisy.	| <i>C. apetalum</i> , Willd.
<i>C. calabioides</i> , G. Don.	| <i>C. Wightiana</i> , Wall.
Bubbe mara, . . . CAN.	| Gorrukeenee, . . . SINGH.
Tsiru panna, . . . MALEAL.	| Cheru Pinnai, . . . TAM.

This is a native of the western provinces of Ceylon, of Travancore, and in Canara and Sunda; it grows on the banks of rivers and streams, chiefly above the ghats, and produces the true East Indian *tacamahaca* resin. It grows to a height of 60 feet, and its timber is used for bullock carts, staves, cask headings, house-building, and for canoes. Sir J. Herschel seems to think the East Indian *tacamahaca* to be the produce of *C. inophyllum*, for he says specimens obtained from *C. inophyllum*, the *tacamahaca* of Ceylon, are desirable in order to aid pharmacologists in accurately determining the *tacamahaca* of European commerce.—*Herschel's Manual of Scientific Enquiry*, p. 414; *Dr. O'Shaughnessy*; *Mr. Mendis*; *Dr. Gibson*; *W. and A.* p. 103.

CALOPHYLLUM DECIPIENS. Wight.

Var. α . *Folii* obovato-oblongis, basi rotundatis, grows in the Ambagamowa district.

Var. β . *Folii* cordato-orbiculatis, grows at Hinidun Corle, at an elevation of 1000 to 2000 feet.—*Thw. En. Pl. Zeyl.* i. p. 51; *Wight, Ic.* 128.

CALOPHYLLUM ELATUM. Bedd.

<i>C. tomentosum</i> , Wight, Hooker.
Poongoo, . . . ANIMALLY.
Siri Poone, . . . S. CAN.
Poon, Poone, . . . MALABAR.

A very large, straight tree, with numerous longitudinal cracks down the bark. Grows abundantly in most of the moist ghat forests or sholas on the western coast from Canara down to Cape Comorin, and in similar forests on the lower Pulneys, Anamallai, Coorg, Mysore, and the Sirumallai. It is never found in dry, deciduous forests. Colonel Beddome says it yields the poon spar of commerce. Thousands of these trees have lately been destroyed by the axe of coffee-planters in Malabar, Coorg, and Travancore; quantities still remain, but chiefly in very inaccessible places. In the ghat forests of South Canara they are felled by the Forest Department, and floated down rivers to the coast depots; but the demand for the article does not seem great, though many years ago a single fine spar has fetched as much as Rs. 1000. The wood is scarcely known, except as a spar, though it is occasionally used for building and bridge-work by planters; it is reddish, coarse-grained, but ornamental. The tree has never been planted, and would not succeed except in the moist forests on the mountains at an elevation of 1000 to 4000 feet; it flowers in January and February, and the seed falls early in the rains, and germinates freely in the dense shade of

the shola forests. This tree was for some years supposed to be the *Calophyllum angustifolium* of Roxburgh, which is from the Prince of Wales' Island.—*Beddome, Fl. Sylv.* p. 2.

CALOPHYLLUM INOPHYLLUM. Linn.

C. bintagor, <i>Roxb.</i>	Balsamaria inophyllum, <i>L.</i>
Phung-nyet, . . . BURM.	Ponna, . . . MALEAL.
Wuma mara, . . . CAN.	Domba Gass, . . . SINGH.
Alexandrian laurel, <i>ENG.</i>	Tamanu, . . . TAHITI.
Udi; Sultana champa, . . . HIND.	Pinne maram, . . . TAM.
	Punnaga chettu, . . . TEL.

This beautiful tree, with an appropriate name, grows in the western part of Ceylon, where it is employed for masts and cross sticks of Yettadhonies and fishing boats, and poles of bullock carts. A cubic foot weighs 40 pounds. In the alpine forests it attains a great size, and it furnishes part of the poon spars so valuable for shipping. This grows to a considerable size on the Malabar coast, but is a still larger tree on the island of Balambangan and along the shores of Banguay and Sampamnangio, where it has got the names of Palo-Maria and Dancawn. It is also common in the Philippine Islands, where, as in Malabar, the natives prepare oil from its fruit. Near the Burman monasteries this fragrant-flowered calophyllum is occasionally seen. It is in flower and fruit most part of the year; it grows well in sandy tracts close to the sea, where few others thrive; it is rare at a distance from the coast. It yields fruit twice a year, in March and September, and frequently attains the age of 300 years. It is cultivated in Java for the sake of its shade and the fragrance of its flowers, and there the wood is much used in house, and to some extent in ship, building. Mr. Dalrymple tells us that no tree is superior to this for knees and crooked timber. A resin is obtained from the roots and trunk, said by some authorities to be identical with the tacamahaca of the isle of Bourbon. The flowers have the odour of mignonette. The seeds yield about 60 per cent. of their weight of oil. In the Samoan islands, the large ava bowl is made from the tamanu, *C. inophyllum*, and occupies a conspicuous place.—*Roxb.; Capt. Elphinstone Erskine, Islands of the Western Pacific*, p. 46; *Drs. Wight, Gibson, Mason, Ainslie, O'Shaughnessy; Eng. Cyc.; Voigt; Thwaites*, i. 51; *Bennet*, i. 112; *Seeman*. See Oils.

CALOPHYLLUM LONGIFOLIUM. M'C.

Tha-ra-bi, BURM. In Pegu this is found near towns, together with two other species of the same genus, which are of smaller growth. It is abundant in Mergui, Tavoy, and in lesser quantities near the Attaran river and its feeders. Maximum girth, 3 cubits; maximum length, 22½ feet. When seasoned it sinks in water. It has a red wood, adapted to cabinetmaking, and is there used for planking, masts, and yards of junks; it is excellent for helves. Strongly recommended to make models.—*Dr. McClelland; Captain Dance*.

CALOPHYLLUM WIGHTIANUM. Wall., Cat.

C. apurium, <i>Choisy.</i>	C. calobates, <i>G. Don.</i>
C. apetalum, <i>Willde.</i>	C. calaba, <i>Linn.</i> , in part.
C. decipiens, <i>W. Ic.</i>	

Colonel Beddome unites all these as the Kal-Poon of S. Canara, a middling-sized tree, common near the banks of rivers on the western sides of the Madras Presidency; in S. Canara it is very common, and its timber is much esteemed; is of a red colour, very hard and heavy, and valuable for engineering purposes.—*Beddome*, p. 90.

CALORNIS METALLICA, the metallic starling of the Aru Islands.

CALOSANTHES INDICA. Blume, W. I.

Bignonia Indica, <i>Roxb.</i>	Spathodea Indica.
„ pentandra, <i>Lour.</i>	
Pana wood, <i>ANGLO-TAM.</i>	Totilla-gass, . . . SINGH.
Khyoung Sha, . . . BURM.	Achimaram; Vanga, <i>TAM.</i>
Shiona, . . . HIND.	Dundilapu chettu, . . . TEL.
Aulantha, . . . MALEAL.	Pam-pena chettu,

This tree grows in Ceylon, Coimbatore, throughout the Konkans, in Mahim, and the jungles of Kandesh. Dr. Wight mentions that it is said to be a very soft and juicy wood, of no value.—*Dr. Wight, Voigt, Thwaites*. See Bignonia Indica.

CALOTES, a genus of reptiles of the family Agamidæ;

C. versicolor, <i>Daud</i> , Ceylon, Sind, Martaban.
C. mystaceus, <i>D. and V.</i> , Ceylon, Mergui.
C. Emma, <i>Gray</i> , Mergui, Martaban.
C. ophiomachus, <i>Merr.</i> , S. India, Ceylon, Nicobara.
C. nemoricola, <i>Jerd.</i> , Neilgherries.
C. gigas, <i>Blyth</i> , Mirzapur, Neilgherries.
C. tricarintus, <i>Blyth</i> , Darjiling.
C. platyceps, <i>Blyth</i> , Khassya Hills.
C. Maria, <i>Gray</i> , Khassya Hills.
C. Rouscii, <i>D. and B.</i> , India.
C. nigrilatis, <i>Peters</i> .

The green calotes of Ceylon, in length about twelve inches, with the exception of a few dark streaks about the head, is as brilliant as the purest emerald or malachite. *C. versicolor* and *C. ophiomachus* possess in a remarkable degree the faculty of changing their hue. The head and neck, when the animal is irritated or hastily swallowing its food, become of a brilliant red (whence the latter species has acquired the name of the 'blood-sucker'), whilst the usual tint of the rest of the body is converted into pale yellow. The sitana, and a number of others, exhibit similar phenomena.

Dr. Jerdon obtained at Sagur a new species of calotes, with enormous head, short and thick body, the tail not exceeding the body in length, and the toes also short and strong.

Calotes Rouxi (?) *Dumeril and Bibron*. Three adult specimens, and another half-grown, were forwarded by Dr. Kelaart from Newera Elia, in Ceylon. They accord fully with the description as regards structure; but the colouring is remarkable, and different again from that of Dr. Jerdon's supposed *C. Rouxi* of S. India.—*Tennent*, p. 277; *Jour. B. A. S.*

CALOTROPIS GIGANTEA. Brown.

Var. *a.* Alba or white. | Var. *b.* Lilicina or blue.
a. White variety.

Asclepias gigantea, Linn.

Ashur, . . . ARAB.	Yerika, Erika, . . . MALEAL.
Shwet Akund, . . . BENG.	Belerika (white), . . . „
Rowi, . . . BOMBAY.	Arka, Mandara, . . . SANSK.
Mai-oh, . . . BURM.	Sri-ai-Taurkam, . . . „
Yokada, . . . CAN.	Moodu-waru, . . . SINGH.
Bed-ul-Ashar, . . . EGYPT.	Vella yercam (white), <i>TAM.</i>
Kercher, . . . „	Tella jilledu, . . . TEL.
Gigantic swallow wort, . . . „	Racha jilledu, . . . „
Madar, Akund, . . . HIND.	Nalla jilledu (purple), . . . „

Calotropis is a genus of plants of the natural order Asclepiaceæ. The species produce useful fibres, a cotton wool, an acrid juice, a gutta percha like substance, and a manna. Three species are met with all over Southern Asia, but *C. gigantea* is that common in the southern, and *C. Hamiltonii* in the northern parts, and *C. procera* grows in Persia and Syria (*Voigt*, p. 540). *C. gigantea* is, by the Hindus, held sacred to Siva.

Its buds also form one of the five flowers on the darts with which Kama, the Indian god of love, is supposed to pierce the hearts of mortals;

'Infants winged, who mirthful throw
Shafts rose-tipped from nectareous bow.'

Sir William Jones refers to it in his hymn to Kama Deva.

The rope is called Lamb-dor, HIND., Toondee coir, TAM., Galum taroo, TEL. It will grow in barren places, and it has been suggested to plant it as a barrier to drift sands. It yields a kind of manna called Shakar-al-ashur, also Ak or Madar ka shakar (sugar). Its milky juice has been prepared like caoutchouc and gutta percha, and yields 50 per cent. It is evaporated in a shallow dish, either in the sun or in the shade; when dry, it may be worked up in hot water with a wooden kneader, as this process removes the acidity of the gum. It becomes immediately flexible in hot water, but hardens in cold water; is soluble in oil of turpentine, and readily takes impressions. It is, however, a conductor of electricity. The wood is white, tolerably hard and close-grained, and grows to a girth of 12 inches. It is used for gunpowder charcoal, and by firework manufacturers. The silky down of the pods is used by the natives on the Madras side in making a soft cotton-like thread. It is susceptible of being spun into the finest yarn for cambric, and has been used for the manufacture of a light substitute for flannel by Messrs. Thresher & Glennie of London. It works well with either silk or cotton. It is also being tried by Messrs. Cowan & Co. of Edinburgh as a material for paper. In 1856 Major Hollings exhibited carpets manufactured in the jail at Shahpur in the Panjab from the follicle in the seed-pod. He mentioned that the manipulation of the floss was precisely the same as cotton. A carpet 7 feet by 3½ feet cost Rs. 7. Fibres are prepared from the stem and branches. These are dried in the sun for 24 or 36 hours, when they are taken up and the bark peeled from the wooden parts, and the greenish-coloured fibres gathered. A night's bleaching whitens them.

The cleaned fibres are one of the bowstring hems of India. This fibre possesses most of the qualities of flax, and can be worked with the same machinery, as it splits to almost any degree of fineness with the hackle, and bears dressing and beating well. It was used by wealthy natives for making strong cloths, cambrics, and lawns; and it is employed for fishing lines, nets, gins, bowstrings, and tiger traps. It does not rot readily in water. It is even considered better adapted for cloth than for cordage. The strength exceeds that of all other vegetable substances, as the following experiments made at Coimbatore, of a three-strand ½ inch rope, will show:—

1. Coir, <i>Cocos nucifera</i> , . . .	sustained 224 lbs.
2. Pooley Manjee, <i>Hibiscus cannabinus</i> , . . .	290 "
3. Marool, <i>Sansevieria Zeylanica</i> , . . .	316 "
4. Cotton, <i>Gossypium herbaceum</i> , . . .	346 "
5. Cutthalay nar, <i>Agave Americana</i> , . . .	362 "
6. Junapum or Sunn, <i>Crotalaria juncea</i> , . . .	407 "
7. Yeroum nar, <i>Calotropis gigantea</i> , . . .	552 "

Its fibre is valued at £30 to £35 a ton. The follicles are supposed by some to be the apple of Sodom. Its juice and the powdered bark of its roots have long been employed as alteratives by the natives of India in leprosy and other cutaneous

affections, also in syphilitic ailments, and are supposed to possess active properties. Dr. Duncan obtained from it a principle which he called Mudarine. In Arabic authors on *Materia Medica* it is even supposed to have been known to the Greeks. The leaves, smeared with oil, are used in rheumatism.—*Wight's Contributions*; *Hooker, Him. Journ.* i. 86; *Royle, Him. Bot.* 275; *Drs. Riddell, Hunter, Mason, O'Shaughnessy*, p. 43; *Wight in M. E. Reports of 1857*; *Royle, Fib. Pl.*; *Simmonds, Com. Prod.*; *Burton*, iii. 122; *Jour. Agri-Hort. Socy. of India*, viii. 107, 226. See Carbon.

CALOTROPIS HERBACEA. Carey.

Asclepias herbacea, Roxb. | Chota Akunda, HIND.

The roots are employed to make gunpowder charcoal. The stem yields useful, strong fibres, and the white, silk-like material of the pods has been successfully mixed with silk.—*Voigt*; *M. E. Proceedings*.

CALOTROPIS PROCERA. R. Brown.

<i>C. Hamiltonii</i> , W.	<i>C. gigantea</i> , Andr.
<i>Asclepias procera</i> , Ait.	<i>C. Wallichii</i> , W. Contr.
Aka, Madar, . . . HIND.	Pashkand, . . . PANJAB.
Spulmei, . . . PANJAB.	Nalla jilledu, . . .
Spulmak, . . . "	Jilledu, . . . TEL.

This grows in Palestine, Abyssinia, Arabia, in Hindustan, the Peninsula of India, Peshawur, and the Panjab, is quite arboreous, ten or twelve feet high, and in Sind four and five feet in girth. The bark is stripped and made into halters for cattle, ropes, netting, twine, and fishing lines, all durable. The silky floss of its follicles is used for pillows. A manna, Shakar-al-Ashur and Shakar-at-Tighal, obtained from it, is sold in the shops. Its acrid juice is applied to cutaneous ailments and in leprosy, and is used by Rajputs to poison their infant daughters. The fresh bark of the root, also the powder of the root, are likewise used in leprosy. The bark of the root and the dried milk possess similar properties to those of the *C. gigantea*; it is, however, far inferior as an emetic remedy. According to Dr. Wallich, this and *C. gigantea* are the same species. The insect that causes the manna is called Galtigul.—*Royle, Ill. Ind. Bot.* p. 275; *O'Sh.* p. 454; *Stewart*; *Powell*.

CALPA. SANSK. Creation or formation. In Hindu theogony, at the end of every calpa (creation), all things are re-absorbed in the deity, who, in the interval of another creation, reposes himself on the serpent *esha* (duration), who is also termed *ananta* (endless). *Agni savarni*, in Hindu mythology, is one of the 14 patriarchs who preside successively over the 14 *Manwantara* of the calpa.—*Warren's Kala Sanhita*, p. 311.

CALPENTYN ISLAND, south of Cordiva, is a spit of sand which runs off the Ceylon shore on the west coast, and extends from lat. 7° 36' to 8° 16' N. The fort is in lat. 8° 14' 20" N., and long. 79° 45' E. A statue of St. Anne is on its N.E. end. The people are industrious; cultivate the cocoanut, and gather Calpentin moss and the orchilla weed. In the Gobb, or lake behind the peninsula, there is an extraordinary abundance of fish, which are dried and exported. Sharks' fins, trepang, and turtle are also sold. The long tongue of land on the south almost touches the main.

CALPI, a Hindu astronomical term of 4,320,000,000 years. See Calpa.

CALPICARPUM ROXBURGHII. G. Don.

Cerbera fruticosa; periwinkle tree.

Sa-lat, . . . BURM. | Gutti gunneru, . . . TEL.

A handsome flowering shrub, almost constantly covered with blossoms like those of the rosy periwinkle, *Vinca rosea*, but larger and faintly fragrant.—*Mason*.

CALTURA, a small sea-coast town in Ceylon, in lat. 8° 4' E., long. 6° 12' N. A favourite resort of the Dutch and British.

CALUMBA ROOT. *Cocculus palmatus*, *D. C.*
Jateorrhiza calumba and *J. palmata*, *Miers*.

A plant of east tropical Africa, which was first made known as a medicine by F. Redi about 1677. *Semedus* mentioned it before 1722 among medicines from India. In works on *Materia Medica* in use in India, it occurs by the name of *Kalumb*. It grows wild in the forests of Mozambique and Obo in Eastern Africa, and got its name because it was imported indirectly through Colombo in Ceylon.

CALUYERE. **SINGH.** A tree of the northern and eastern part of Ceylon, furnishing a fine black wood, used largely for buildings and furniture. A cubic foot weighs 71 lbs., and it lasts 80 years.—*Mendis*.

CALYA or *Cali-naga*, a serpent slain by Krishna.

CALYMERE POINT, on the Coromandel coast, in lat. 10° 18' N., long. 79° 54½' E., is low, and covered with cocoanut trees, with two pagodas near each other about a mile inland.—*Horsburgh*.

CALYPTOMENA RAFFLESII, the tampoe tree of Borneo. Its fruit has an agreeable sub-acid flavour, and is largely eaten. The pulp, mixed with rice and fermented, furnishes an intoxicating drink.

CALYPTRÆIDÆ, a family of the mollusca, the bonnet limpets, containing several recent and fossil genera, the genus *Calyptraea* being the cup and saucer limpet.

CALYPTRANTHES CARYOPHYLLIFOLIA.
Willde, Swartz.

Eugenia caryophyllifolia, *E. Jambolana*, *Roxb.*

Jamoon, . . . **HIND.** | Nawel maram, . . . **TAM.**
Battedombe, . . . **SINGH.?** | Neredi chettu, . . . **TEL.**

A large-growing timber tree. The wood is light, and chiefly used for making grain measures, but is also made into carriage frames, cots, etc., and in Ceylon for common house-building; a cubic foot weighs 45 lbs. The bark is astringent, and is used in decoction by the natives for dysentery. The fruit when ripe is of a very dark purple colour, and about the size of a large cherry. In taste it somewhat resembles the sloe, but is much sweeter. A variety of this tree—

Oojla jamoon, . . . **DUK.** | Vullay nawel, . . . **TAM.**
Sweta jembo, . . . **SANSK.** | Tella neredi, . . . **TEL.**

has a fruit nearly similar to it in natural qualities, and has got its names from being of a different colour (white).—*Riddell; Mendis; Ainslie*.

CALYSACCION ANGUSTIFOLIA. *Gibson*.
Soorpunni, . . . **CAN.** | Koolmara, . . . **CAN.**

Grows in Canara and Sunda, in ravines of the ghats, and below in sheltered valleys, but is not common in N. Canara or Sunda. The tree there furnishes one of the poon spars. It produces an excellent edible fruit. It is a tree which ought to be conserved everywhere, and largely increased.—*Dr. Gibson*.

CALYSACCION LONGIFOLIUM. *Roxb.*

Ochrocarpus longifolius, *Benth. et Hook.*
Calophyllum longifolium, *Wall., Cat.*
Mammea longifolia, *B. H.*

Tha-ra-bi, . . . **BURM.** | Suringel, . . . **MAHR.**
Taringi, . . . **CAN.** | Gardoondy, . . . "
Woondy (male tree), **MAHR.** | Gorgoondy, . . . "
Pooney (fem.), . . . "

A large tree which grows in the Northern Circars, Konkans, the Kennari jungles, Malabar, and Western Mysore. The flower-buds, *Nag-kesur*, are used for dyeing silk, and for their violet perfume.—*Useful Plants; Elliot's Flora Andhrica; Roxb.; Beddome*.

CALYSTEGIA SEPIUM. *Smith*. *Sinen-hwa*, **CHINESE**. A large and beautiful plant of China, one of the *Convolvulaceæ*. Its root is boiled and eaten by the Chinese.—*Smith*.

CALYX, the botanical name for the outer covering of the flower of a plant.

CAMA, in Hindu cosmogony, the son of Dharma, the first man.

CAMA or *Camadeva*, the Hindu god of love, to whom the last days of spring are dedicated. There is no city in the East where the adorations of the sex to *Camadeva* are more fervent than in Udyapura, 'the city of the rising sun.' On the 13th and 14th of Cheyt they sing hymns handed down by the sacred bards: 'Hail, god of the flowery bow! Hail, warrior with a fish on thy banner! Hail, powerful divinity, who causeth the firmness of the sage to forsake him!' 'Glory to Madana, to Cama, the god of gods; to him by whom Brahma, Vishnu, Siva, and Indra are filled with emotions of rapture!'—*Bhavishya Purana; Tod's Rajasthan*. See *Kama; Kammeri deva*.

CAMA. **HIND.** The lotus flower, *Nelumbium speciosum*. *Camala* or *Camala-devi*, a name of *Lakshmi* as the Hindu goddess of prosperity. See *Lakshmi*.

CAMACHI-PILLU, also *Wassina-pillu*. **TAM.** *Andropogon citratus*, lemon grass. *Camachi-pillu* *Tylum*, lemon-grass oil.

CAMACHYA, a Hindu goddess, a form of *Kali* in her avenging character. *Kali* says, 'By human flesh, *Camachya*, *Chandica*, and *Bhairava*, who assume my shape, are pleased one thousand years.'

CAMA-CUMPA. **SANSK.** The vessel of desire; an ornamental vase on Hindu temples, from which grain is represented as pouring.—*Tod*. See *Cum-bha-yoni*.

CAMADIHENU or *Surabhi*, a cow produced from the churning of the ocean.

CAMAHWAJA. **SANSK.** The banner of *Cupid*.
CAMALA DEVI was the wife of a raja of *Gujarat*, and was celebrated as the flower of India. On the fall of *Nerwalla*, the capital of *Gujarat*, her husband became a fugitive, and *Camala Devi* was taken prisoner and carried to *Ala-ud-Din's* harem; and, attracted by her beauty, wit, and accomplishments, he made her his queen. Her fascinations soothed that savage *Pathan* in his moodiest hours, and influenced him to a lenity hitherto unknown to him. Her daughter *Dewala Devi* had escaped with her father. Her reputation for beauty equalled that of her mother, and the son of *Ram-deo*, the raja of *Deogiri* (*Dowlatabad*), had long sued for her, but her father, proud of his *Rajput* origin, would not accept a *Mahratta*, even though a prince. *Camala Devi*, however, having expressed to *Ala-ud-Din* a wish to be joined by her daughter, *Ala-ud-Din* sent a strong army, under a general, to bring *Dewala Devi* to *Dehli*. In this extremity, her father accepted the *Mahratta* prince, and sent off his

daughter to Deogiri under an escort, but the escort was overtaken, the fair maiden seized and carried to Dehli, where Khizr Khan, the son of Ala-ud-Din, married her. Their union was very happy, and the poet Khusrû praised them. But Khizr Khan's eyes were put out by Cafoor. A few years from the death of Ala-ud-Din, the throne of Dehli was filled by a converted Hindu, who filled the capital with Hindu troops, put to death all the survivors of Ala-ud-Din's family, and transferred Dewula Devi to his own zanana.

CAMALAPBABIHU, a title of Vishnu.

CAMALAPUR, a large village 32 miles north-west from Bellary. Iron ore from the neighbouring hills is largely smelted here.

CAMARI, according to Abul Ghazi, one of the eight sons of Japhet, whence the Camari, Cimmerii, or Cimbri. The Camari are one of the Saura tribes, or sun-worshippers of Saurashtra; claim descent from Garuda, the bird god of Vishnu (who aided Rama to the discovery of Sita), and the Macara or crocodile; and date the fabulous conception from that event, and their original abode from Sancodra Bate, or island of Sancodra. Whether to the Dioscorides at the entrance of the Arabian Gulf this name was given, evidently corrupted from Sanc'ha-dwara to Socotra, need not be inquired into here. Like the isle in the entrance of the gulf of Cutch, it is the dwara or portal to the Sinus Arabicus, and the pearl shell (sanc'ha) there abounds. This tribe deduce their origin from Rama's expedition, and allege that their crocodile mother landed them where they still reside. They seem to be a Scythic race from Sakadwipa and the Dasht-i-Kapchak, and, like the Takshak, Jit, Kat'hi, and Hun, have entered India from the north-west.—*Tod's Rajasthan*, i. p. 604.

CAMBALU, an ancient name of China.

CAMBAY, in long. 72° 51' E., and lat. 22° 5' N., in Gujerat, is at the head of the bay which bears its name, on the estuary of the Mahi, between the mouths of the Sabarmati on the west, and the Mahi on the east. It is said to be the town in which Zarinonachegas was born. Marco Polo travelled through it at the close of the 13th century, when on his return to Europe. Cambay or Khambhat is the capital of a feudatory state ruled by a Mahomedan family of Moghul descent, and of the Shiah sect. In 1875 its area was estimated at 350 square miles, and its population at 175,000. Cambay town has 33,709 souls. Near the town, skirting the shore of the gulf, and along the banks of the Mahi and Sabarmati rivers, are vast tracts of salt marsh-land, submerged at high spring tides. The population consists of Mahomedans, Jains, and Parsees, with the wild tribes of Koli and Wagri, and the languages spoken are Gujerati and Hindustani. The name is from Khambha-tirth or Stambha-tirth, the pool of Mahadeva. Vikramaditya is said to have been born here.

Cambay Gulf is formed by the coast of Gujerat on the west, and the Peninsula of India on the east, and extends due north 80 miles, being about 3 miles wide at its entrance. In ordinary springs the rise and fall is 25 feet. Surat lies at the eastern point of the gulf. The gulf receives the two rivers Tapti and Nerbadda.—*Imp. Gaz.*

Cambay Stones.—In 1503, Lewes Uertomenes,

a learned gentleman of Rome (See *As. Soc. Jl.* 1824, vol. xviii.), says, 'In this region is also a mountain where the onyx stone, commonly called the cornelian, is found; and not far from this, another, where chalcidony and diamond are found.' It was visited in 1623 by Pietro de la Valle. Captain Hamilton, who visited Cambay in 1681, says, 'The cornelian and agate stones are found in this river, and nowhere else in the world. Of cornelian they make stones for signets; and of the agates, cabinets entire except the lids. I have seen some 14 or 15 inches long, and 8 or 9 inches deep, valued at £40. They also make bowls of some kinds of agate; and spoons, and handles of swords, daggers, and knives, and buttons, and stone seals and snuffboxes of great value.'

Cambay still enjoys celebrity for its silicious minerals,—cornelians from Ratanpur in the Rajpipla state; agates from Rewakanta, Kapadwauj, and Sukaltirth, on the Nerbadda, and from Rajkot in Kattyawar. The Bhils are the miners. They are worked into every variety of ornament,—cups, boxes, necklaces, handles of daggers, of knives and forks, seals, etc. Cambay stones form a distinct geological formation, derived probably from the amygdaloid trap rocks drained by the Nerbadda and Tapti. They pass in Europe and America for Scotch, Irish, Chamouni, Niagara, Isle of Wight 'pebbles,' according to the place in which they are sold. The Brazils import them as largely as India into Europe, where the terms 'Brazilian' and 'Indian' agates are used indifferently by the trade. The principal varieties sold in Bombay are crystal, milk-quartz, prase, a green variety, moss stone, mocha stone, fortification agate, chalcedony, cornelian, chrysoprase? heliotrope, onyx, obsidian? and very rarely amethyst.

Necklaces, black and green, . . .	Rs. 0.8 to 2.8
" red, . . .	0.2 " 5 "
Paper-cutters, . . .	0.8 " 2 "
Knife handles, per dozen, . . .	6 " 12 "
Stones for brooches, . . .	1 to 8 annas.
Snuffboxes, . . .	0.12 to 10 "
Cups and saucers, . . .	5 " 100 "
Pen handles, . . .	0.6 " 1 "
Studs of all sorts, per dozen, . . .	0.6 " 2 "
Trouser buttons, per pair, . . .	8 to 10 annas.
Coat, . . .	6 " 8 "
Bracelet beads of all sorts, per pair, . . .	0.12 to " 2 "
Paper-weights, . . .	4 " 5 "
Tables of sizes, . . .	15 " 50 "
Guns, . . .	25 " 100 "
Ear-rings, per pair, . . .	0.2 " 1 "
Finger-rings, . . .	1 to 6 annas.

The fragments of a Murrhine cup—the little Cambay stone cup still made in Cambay—were exhibited in the theatre of Nero, as if, adds Pliny, they had been the ashes of 'no less than Alexander the Great himself!' Seventy thousand sesterces was the price of one of these little Cambay cups in Rome in the days of Pompey. The price in Bombay ranges now from Rs. 5 to Rs. 100. Nero paid 1,000,000 sesterces for a cup, 'a fact well worthy of remembrance,' aptly remarks Pliny, 'that the father of his country should have drunk from a vessel of such a costly price!' The stones are sawn or ground down; for the native lapidary's wheel consists of a strong wooden platform 16 inches by 6, and 3 inches thick. In this are two strong wooden uprights. Between these is a wooden roller 8 inches long and 3 in diameter, fastened into a head at the one end. This works on an iron spindle or axle at each end. On the

one end the axle is screwed and fitted with a nut, by which the saw or grinding wheel can be made fast. The saw consists of a thin plate of iron, the cutting material consisting of ground corundum. The lap wheels consist of two circular discs or cakes of lac, with ground koorund, coarse or fine, according to the work, of a copper disc for polishing, and a wooden one for finishing the work. These are spun backwards and forwards by a bow, the string of which passes round the roller. The lapidary sits on his hams, steadying the wheel with his foot, and holding on the stone with his left hand, while he works the bow with his right. For very fine work, a small-sized wheel, similar to the English lapidary's wheel, but of smaller size, is used. It is driven by a multiplying wheel, strap, and pulley. The custom-house returns give the value of the traffic in Cambay stones at an average betwixt £10,000 and £12,000 annually, one per cent. of the stones finding their way to Europe. Gayni or Gajni was one of the ancient names of Cambay, and it was the port of the ancient Balabhipura, the ruins of which are 3 miles from Cambay. Almeyda, when he visited the coast of Cambay, observed a very ancient town, with a large mosque, and near it a spacious place, covered with tumuli.—*Hamilton's New Account of the East Indies*, Lond. 1744; *Report of the Juries in 1851*; *Pennant's Hindoostan*, i. p. 64; *Tod's Travels*.

CAMBESSEDEA OPPOSITIFOLIA. *W. & A.*
Mangifera oppositifolia, *Roxb.*

This indigenous tree of Tenasserim has a reddish-coloured, hard, close-grained wood, said to be durable. It produces a fruit much like a plum. There are two varieties, one bearing an intensely sour fruit, and the other one as insipidly sweet.—*Mason; Voigt*.

CAMBODIA, or the kingdom of Khmer, extends from long. 101° 30' to 104° 30' E., and lat. 10° 30' to 14° N., with an area of 62,000 square miles. It was reduced to its present dimensions in 1862, by two of its provinces being annexed to Siam. It is bounded on the S.W. by the Gulf of Siam, on the S.E. by French Cochinchina, on the N. by Laos, and on the N.W. and W. by Battambang and Angkor. The Mei-kong flows through the kingdom. The population is 1,000,000, of whom four-fifths are the native Kho. The Chinese number 100,000. Buddhism prevails. Its capital is Phnompenh, on the Mei-kong. Cambodia town is nearly 240 miles up the river. It has four provinces, Potinat, Kampong-Suai, Kampong, and Kampot-Son. For the past three centuries its independence has been lost, Siam on the one side, and Cochinchina on the other, having encroached on it. In Cambodia is the great temple of Nakhon-Vat, which seems to have been built in the 10th century. Every angle of the roof, every entablature, every cornice, bears the seven-headed serpent. The outer enclosure measures 570 by 650 feet. It is a towered pyramid more than 600 feet in breadth, and rising to 180 feet at the summit of the central tower. It is built of large stones, beautifully fitted, without cement. M. Delaporte says that the ancient Khmer temples were dedicated to Brahmanism. At Angkor-Wat he detached from the higher parts the chefs d'œuvre of Cambodian sculpture,—bas-reliefs, once brilliantly gilt; pediments,—all the subjects of which M. Delaporte maintains, down to those which decorate the most secluded sanctuary, are devoted to the

exploits of Rama and the glories of Vishnu. At Angkor-Tom, M. Delaporte visited several new monuments, on most of which he also finds on the principal pediments the exploits of Rama and Vishnu. He cleared of rubbish and explored the ancient palace of the Khmer kings, a work of magnificent and wonderful sculpture, the rising terraces of which are adorned with superb compositions in bas-relief; the enormous three-headed elephant, Iravati, is there enthroned in all the places of honour, as at the angles of all the gates of the city, where he is shown by the god Indra, accompanied by two apsaras. When the country became subject to the government of Cochinchina, the trade of Cambodia was transferred to Sai-gon, which was occupied by the French in 1863. Cambodia river, also called the Mei-kong, discharges itself into the sea by three principal branches, of which the most western is the best for ships. Its entrance is in lat. 9° 31' N., and long. 106° 36½' E. It is one of the largest rivers in Asia, and is said to rise in a lake in Yunnan.—*Chin. Jap. and Phil. Chr. and Der.*, 1881.

CAMBOO. *TAM.* *Holcus spicatus*.

CAMBRIC or Cambrick.

Kameryksaduck, . . .	DUT.	Cambraia,	PORT.
Cambray Batiste, . . .	FR.	Kamertug,	RUS.
Kammertuch,	GER.	Cambrai,	SP.
Cambraja,	IT.		

A fine cotton or linen fabric, largely imported into India.

CAMBRIDGE, author of *War in India*, London 1762.

CAMBYSES, a king of Persia of the Kaianian dynasty, and father of Cyrus. He conquered Egypt, B.C. 525 to 522. He took Memphis by storm; and he visited the tomb of Menes. Cambyzes is a Greek variant of the cuneiform Kabujiya.—*Hansen, Egypt*, ii. 610, iii. 237, iv. 288, v. 740. See *Fars*; *Persian Kings*.

CAMEL.

Jamal, Ganal,	ARAB.	Camello,	IT.	SP.
Chameau,	FR.	Camelus,	LAT.	
Kameel,	GER.	Unta,	MALAY.	
Kamelos,	GR.	Ottagam,	TAM.	
Gont,	HIND.	Loti-pitta, Wonté,	TEL.	

Camels are mentioned in 1 Kings iv. 28, Esther viii. 10, and Isaiah lx. 6; and they are still largely used as beasts of burden, or to carry messages, and for war purposes, in Egypt and in all the countries in the south of Asia, from Syria up to the Burmese countries and China. There are two kinds, that with one hump, and another with two humps. The species employed on the European steppes through which the Don and Volga flow to their respective seas, are the two-humped; and Lieutenant Irwin distinguishes two varieties of two-humped camels. Beyond the Jaxartes, he remarks, is the two-humped species, in the Turki language called uzhrî, and by British writers Bactrian. His height is far less than an Indian camel, his hair longer; he is not capable of bearing severe heat, and is not easily naturalized even at Bokhara. In Khokan he is the prevalent species. The camel called Baghdadi has also two humps, but his height is equal to that of the Indian. He is found chiefly in the south-west of Khorasan, yet even there is much outnumbered by the Indian species, meaning, we presume, the one-humped camel of Turkestan.

In Arabia there are three varieties of one-hump camels. The largest and clumsiest, called khowas,

are used to carry heavy burdens at the slow and measured pace of a large caravan; the second, called *deloul*, or saddle camels, are selected when young from the former, and are employed in journeys, singly, or with light caravans consisting of similar animals; the third bears the name of *hajin* in Arabia, *maherry* in Africa, *hukary* in S. Asia, and is the dromedary of the Hebrew Scriptures. It is lightly formed, and of a very pale brown, approaching a cream colour. Being well trained, its speed with a man on its back and no baggage is between eight and nine miles per hour, and it can accomplish at the utmost 70 miles in 24 hours for two or three days in succession. Wellsted tells us (i. 292) that Nejd is equally the nursery of the camel as of the horse; but the camel of Oman in all ages has been celebrated in the songs of the Arabs as the fleetest. Their legs are more slender and straight, and their eyes more prominent and sparkling. The single hump of the camel of Arabia is round and fleshy whilst the animal continues in good condition, but wastes away when out of condition. Wellsted had known £28 paid for one in Oman; but £6 to £10 is their average price. Depth of chest and largeness of barrel constitute their chief points of excellency. A camel of Hejaz can carry from 250 to 500 lbs.; and an ordinary burden camel can walk about 2½ miles an hour, making daily a march of 20 or 30 miles. M. Fontaine mentions an instance of an Arab on his camel taking and returning with a message from Coscior to Canneh, a distance of 225 miles, in 28 hours, at the rate of 8 miles an hour continually, which seems incredible. Colonel Chesney mentions that he crossed from Basrah to Damascus, 958½ miles, in 19 days, or daily 50 miles. Nizain-ud-Din Ahmad, author of the *Tabakat-i-Akbari*, while Bakshi of Gujerat, was summoned to Lahore by the emperor (A.H. 998) A.D. 1589-90. The *Wakiat-i-Mustakhi* says that he took with him a party on camels, and that they accomplished the journey of 600 kos (1200 miles) in twelve days, for which the king bestowed honours on him. General Ferrier tells us that the camels from Turkestan and the country of the Hazara are exceedingly large and strong, but not very active. Those from the Scistan are slenderly formed and wiry, but, though small, are as hardy an animal as can be found, and incredibly swift; they will travel 25 leagues in a day without feeling fatigue, and are never affected by the great heat of the sun. These are generally used for riding, and those of Turkestan as beasts of burden. The Bokhara camel and the two-humped Kirghis camel are only surpassed in strength and swiftness by the Arab, and especially the camel of the Hejaz. Besides the Bactrian camel, the Turkomans have a mule breed between this and the Arabian animal, with a hump which can neither be called single nor double, though more near the latter than the former. This is a large, useful, and highly-prized animal, capable of transporting from 1000 to 1200 lbs. with ease; but the creature is short-lived, and the Arabs do not breed from it, giving as a reason that the progeny are intractable and bad-tempered.

In Colonel Stewart's 'Journey through North-Eastern Persia,' he states that the load of the Khorasane camel is 600 to 700 lbs. A correspondent of the *Pioneer* writes: 'I have fre-

quently seen Brahui camels go out of the fort at Dadur, in Southern Afghanistan, laden with 12 maunds, about 1000 lbs., the ordinary load being 8 maunds, or 650 lbs. I have also met them frequently on the line of march with these loads, and yet one rarely saw a dead Brahui camel.'

They were used by the British in the wars on the N.W. frontier of 1879-1881, but they died in great numbers.

Camels are extensively bred in Murwut, Mee-anwullee, and Esakhail, and are purchased by the Povinda and other itinerant traffickers. In Syria, the rutting season is in spring, and the males then become extremely unruly. The female carries twelve months, and breeds one at a time. The young camels are weaned at the beginning of the second year. Camels are known to attain to the age of 40 years; but after 25 or 30 its activity begins to fail, and it is no longer able to endure much fatigue. In the northern districts of Arabia, the hair is not shorn from the camel, like wool from sheep, but is plucked off, about the time it is naturally shed by the animal, and seldom amounts to more than two pounds. It is woven into stuffs for clothing.

M. Huc, however, tells us that in Chinese Tartary the fur of an ordinary camel weighs about ten pounds. It is sometimes as fine as silk. That which the entire camel has under its neck and along its legs is rough, tufted, and black, but the hair in general is reddish or grey. The Tartars do not take any care of it, but suffer it, when it falls off, to be lost. The milk of the camel is excellent, both for butter and cheese; the flesh is tough, ill-tasted, and little esteemed by the Tartars. They make use, however, of the hump, which they cut in slices and take with their tea. It is said that the emperor Heliogabalus had camel's flesh served at his banquets, and that he was especially partial to the foot; but to modern taste the flesh of the camel is detestable. Like the sheep and goat, their need for water to drink varies with the dryness or moistness of their food. A succulent grass, moist with rain or dew, and near the bank of rivers, of itself furnishes almost sufficient fluid for their wants; but a dry grass, an arid atmosphere, and a burnt-up soil render them very thirsty, and they then readily rush into water. Skinner mentions (ii. pp. 112, 113) that his camels had been 19 complete days without drinking. But they can lay in a large store of food. Pottinger mentions that he allowed his camel 15 lbs. of flour daily, in addition to all the grass it ate. The camels eat the tamarisk and the camel thorn. In parts of the Panjab country, where camels are reared in great numbers, they delight especially in lana, plants of the salsolaceous tribe, which are also useful for burning to get soda. There is often quite a rivalry of interest over a patch of salsola land,—the camel-feeder wants it for his animal, and the soda burner for his furnaces.—*Powell's Handbook*; *Dr. J. L. Stewart, M.D.; Chesney's Overland Route*; *Huc's Recollections of a Journey*, p. 130; *Postans' Personal Observations*, p. 108; *Mignan's Travels*, p. 27; *Wellsted's Tra.*; *Burton's Pil.*; *Pottinger's Beluch and Sinde*; *Fontaine's Egypt*; *Robinson's Tra.* ii. p. 183.

CAMELEOPARD, or giraffe, a mammal of S. Africa, the *Camelopardis giraffa* of naturalists. One variety has been named *C. Æthiopica*, *Ogilby*; another variety, *C. Sennaarensis*.

CAMELIDÆ. Fossil remains of this family have been discovered in the Siwalik hills and in Burma. See Camel; Camelus.

CAMELINE, the aba cloak of the Arabs, made of camel's hair. The aba, or camelina, as it is called in the Persian Gulf, is worn in Oman by all classes; it is the camel's hair cloak of Arab shaikhs, and is often striped white and brown.

CAMELIA, a genus of the east of India and China, of the nat. ord. Ternstromiaceæ, and furnishing several species of ornamental flower plants, such as *C. Japonica*, *malliflora*, *reticulata*, *drupifera*, and *thea*. *C. oleifera* of China yields a valuable oil, *C. kissi* is a tree of Nepal, and *C. caudata* is a shrub of the Khassya hills.—*Voigt*.

CAMELLIA JAPONICA. The single red variety of this species grows spontaneously in the woods of China, from 20 to 30 feet in height, and with stems thick in proportion. Its elegant flowers are much admired by the Chinese, who enumerate thirty or forty varieties, for each of which they have a separate name. Many of these varieties are unknown out of China, and Chinese gardeners are likewise ignorant of a large proportion of those found in western conservatories. This elegant flower is cultivated solely for its beauty; but there are other species of *camellia* raised for their seeds, the oil expressed from them being serviceable for many household and mechanical purposes. The *camellia* bears the same Chinese name that the tea plant does; and the term *cha* is likewise employed, as tea is with ourselves, to designate any infusion.—*Williams' Middle Kingdom*, p. 285; *Fortune's Residence*.

CAMELLIA THEA. *Link*. China tea plant. *C. theifera*, *Griffith*. | *Cha*, *HIND*.

The Assam tea plant is a shrub with a thin grey bark, and grey soft wood, weighing 56 lbs. per cubic foot. It is cultivated in Kangra, Kuhl, Dehra Dûn, Kumaun, Darjeeling, the Western Duars, Assam, Cachar, Chittagong, Hazaribagh, in Northern India, and also on the Nilgiri Hills and Ceylon.—*Gamble*.

CAMEL'S HAIR.

Poil de Chameau, . . . FR.	Mu-i-Shutur, . . . PERS.
Laine de chevron, . . . "	Pelo-o-lana de . . . "
Kameel-haar, . . . GER.	Camello, . . . SP.
Oont ka bal, . . . HIND.	Otagam ma'ir, . . . TAM.
Pelo di Camello, . . . IT.	Wonte ventrukulu, . . . TEL.
Unta Ruma, . . . MALAY.	

The soft underwood is of a light-brown colour. In the Panjab it is made into chogas of a cheap kind, but they are soft, warm, and useful. The long hair is not made use of; it is employed in Europe for making paint-brushes.—*Powell, Handbook, Panjab*; *McCulloch's Dictionary*.

CAMEL'S-THORN, *Alhaji maurorum*.

CAMEL THISTLE, *Echinopus echinatus*.

CAMELUS BACTRIANUS. *Linn*.

<i>C. ditrophus</i> , <i>Walther</i>.	| <i>C. turcicus</i> , <i>Alpinus</i> .
<i>Mecheri</i>, . . . . ?	| <i>Le chameau</i> , . . . FR.
<i>Bactrian camel</i> , . . . ENG.	| <i>Trampel kestan</i> , . . . GER.

It is found in N. Persia and Turkestan. It is about 10 feet long, has two humps on its back, has dark-brown shaggy hair, long under the throat.—*Eng. Cyc*.

CAMELUS DROMEDARIUS. *Linn*.

<i>C. monotophus</i> , <i>Eversmann</i>.	| <i>C. dromas</i> , <i>Gegner</i> .
<i>C. vulgaris</i> , <i>Forsk</i>.	| <i>C. minimus</i> , <i>Klein</i> .
	| <i>C. vetus</i> , <i>Frisch</i> .
<i>Jamal</i> , ARAB.	| <i>Arabian camel</i> , . . . ENG.
<i>Camel</i> , <i>dromedary</i> , ENG.	| <i>Le dromedaire</i> , . . . FR.

Its countries are Africa, Arabia, Persia, Baluchistan, Rajputana. It is about 8 feet long, has one hump on the middle of the back, pale brown hair. An instance of great endurance of this camel is mentioned by Captain Smith, who purchased one, named Tipu Sahib, for Rs. 300, that carried him 680 miles in 12 days across the desert of India from Jodhpur to Sukkur in Sind. On another occasion, the same camel carried him 110 miles from Sukkur to Kotri, without a halt, in 30 hours.—*Smith's Nepal*, pp. 20, 26; *Eng. Cyc*. See Camel.

CAMELIUS SIVALENSIS, a fossil species discovered by Dr. Falconer and Captain Cautley in the tertiary deposits of the Siwalik Hills of Hindustan. Its crania, jaws, and teeth are in the British Museum. It was nearly related to the existing species, but exceeded them by at least one-seventh in height.—*Eng. Cyc*. p. 733.

CAMEO, the cyanea of Pliny. They are still largely manufactured in Italy from the large red shield shell of the Maldiv Islands, the *Cassia rufa*. It is brought from the Maldives to Ceylon as tribute, and is exported to Italy. It is not a manufacture of India. In 1846 the average value of the large cameos made in Paris was six francs each, giving a sterling value of £32,000; and the value of the small cameos was about £8000, giving a total value of the cameos produced in Paris in 1846 at £40,000. At the same time, in England not more than six persons were employed at the trade. The black helmet, on account of the advantageous contrast of colour in the layers, produces very effective cameos. In 1847 the consumption of shells in France for this purpose was—

Bull's Mouth, . . . 80,000	av. price 1s. 8d.	value £6400
Black Helmet, . . . 8,000	" 5s. 0d.	" 1800
Horned Helmet, . . . 500	" 2s. 6d.	" 60
Queen Conch, . . . 12,000	" 1s. 2½d.	" 700

The art of cameo-cutting was confined to Italy until 1830, at which time an Italian began cutting cameos in Paris. It might be introduced into India.

CAMERON, JOHN, F.R.G.S., author of *Our Tropical Possessions in Malayan India*.

CAM-HI, an emperor of China who first subdued the Mongol Tartars, which he effected more by kindness than by the sword.

CAMJOO of Tibet, *Capra hircus*, *Linn*.

CAMLET.

<i>Kamelot</i> , DUT.	| <i>Ciambellotto</i> , . . . IT.
<i>Kamelot</i> , FR.	| <i>Kamlot</i> , RUS.
<i>Kamelot</i> , GER.	| <i>Camelote</i> , SP.

A fabric of wool or long hair.—*McCulloch*.

CAMMETTI. MALAY? *Excoecaria canimettia*.

CAMOENS. Luis de Camoens, a native of Portugal, was born at Lisbon about A.D. 1524, and educated at the University of Coimbra, but, falling in love with Catharina de Atayde, he was banished from court. He joined the army invading Morocco as a soldier, where he was often wounded, and lost an eye, and he describes himself then as with 'one hand the pen and one the sword employed;' but, neglected, he left Portugal A.D. 1553, and landed at Goa, after a voyage of nine months. He joined an expedition against the king of Pimenta, and a year afterwards accompanied Manoel de Vasconcellos up the Red Sea, and returned to Goa, but he involved himself by writing his *Absurdities of India*, and was banished to the Moluccas. During the five years

that he remained there, he visited some of the islands of the Archipelago, and amassed a small fortune, but, embarking it in trade, he was shipwrecked near the river Mei-kong in Cambodia, saving only the manuscript of his poem, the *Lusiad*, deluged with the waves, through which, clinging to a plank, he forced his way to the shore. The *Lusiad* describes the system of modern commerce, founded on the discovery of the Cape route. The geographical descriptions are singularly accurate. He returned to Lisbon, where he lived in great poverty, till his death in the Lisbon hospital, A.D. 1579. His poem, the *Lusiad*, celebrates the great voyage of Vasco da Gama, and gives a history of the Portuguese in India. The 'Cave of Camoens,' where he is supposed to have written a portion of his *Lusiad*, is a place of interest at Macao. It is picturesquely situated upon the summit of a small hill on the margin of the inner harbour.—*American Expedition to Japan*, p. 165.

CAMOMILE, *Anthemis nobilis*.

Ehdaki mirzie, . . .	ARAB.	Chamomilla, . . .	LAT.
Camomille, . . .	FR.	Babuneh-gow, . . .	PERS.
Romische hamiller, . . .	GER.	Manzanilla, . . .	SP.
Babune-ka-phul, . . .	HIND.	Chamandi pu, . . .	TAM.
Camomilla, . . .	IT.	Shamanti puvva, . . .	TEL.

A herb much employed in domestic medicine.

CAMPANULACEÆ, the Campanula tribe of plants, comprising the genera *Campanula*, *Cephalostigma*, *Cidonopsis*, *Symphandra*, and *Wahlerbergia*. The genus *Campanula* consists of flowering plants, the Canterbury bell, Venus's looking-glass. *C. dehiscens* and *C. lancifolia* are noticed by Roxburgh as growing in Bengal. *C. edulis* is a native of Arabia Felix. Its thick and sapid root contains a considerable quantity of starch, and is eaten by children. *C. glauca*, its root is used by the Japanese in syphilis. *C. grandiflora* grows wild amongst the Chinese hills.—*Fortune's Wanderings*.

CAMPBELL, A., M.D., a medical officer of the Bengal army, who was political officer at Darjiling for upwards of a quarter of a century. When he first took charge of the office, there were not twenty families, but by 1853 a population of ten thousand had gathered together. He found it an inaccessible tract of forest, and left it an excellent sanatorium, with a revenue of fifty thousand rupees. He journeyed to the confines of Tartary. He wrote an Itinerary from Phari, in Tibet, to Lhasa, with appendices; Routes from Darjiling to Phari; Report of the Death of Cosmo de Koros, the Tibetan Scholar; The Literature and Origin of certain Hill Tribes in Sikkim; Memorandum on the Bora Chung of Bootan; On the Native Akim or Salagit of Nepal; On the Inhabitants of Sikkim and their Language; Limboos of Sikkim and other Hills.—*Beng. As. Soc. Trans. and Journ.*

CAMPBELL, SIR COLIN. See Clyde.

CAMPBELL, SIR GEORGE, K.C.S.I., a Bengal civil servant, born in 1824, and sailed for India in 1842. In 1845 he was appointed the assistant to the Governor-General's Agent, N.W. Frontier, subsequently Deputy-Commissioner, Cis-Sutlej States. On returning to Britain, he published *Modern India*; and *India as it May Be*. He wrote extensively on the ethnology of India generally. In 1854 he was called to the bar; in 1855 he was appointed Commissioner of the Cis-Sutlej States; and in 1867, Commissioner of the Central Provinces. He was Lieutenant-Governor of Bengal; and on

retiring from the service, became a member of the Indian Council in London, and subsequently a member of Parliament.

CAMPBELL, LIEUT. J., Assistant Surveyor-General, an officer of the Madras army, wrote on the use of Sir Howard Douglas' Reflecting Semi-circle; On the Use of Kater's Altitude and Azimuth Instrument; Suggestion of a Tide Register; Table of Specific Gravities of Aqueous Vapour, and Dry and Saturated Air; Meteorological Journal of Royacottah; On the Advancement of Geological Science in India; On the Construction of the Portable Barometer; On the Formation of the Table-land of Southern India; Plain of Baramahal, 2000 feet above the level of the sea, Soda Soils of; On the Manufacture of Steel in Southern India; Improvement of the Silk manufactured in Mysore and the Salem Districts; Report on the Kaolin Earth of Mysore; Report on the Construction of Philosophical Instruments in India; On the Manufacture of Pottery-ware in Southern India; Meteorological Experiments at the Gumsur Mountains; Journey overland to India; On estimating the distance of Objects of Known Height at Sea.—*Mad. J. L. and S. Cal. J. Nat. Hist.*

CAMPFIRE of Scripture, the Henna, or *Lawsonia alba*.

CAMPHOR.

Kafur, AR., HIND., PERS.	Kapur Japan, . . .	JAP.
Pa-yok, also Parouk, BUR.	Camphora, . . .	LAT.
Kapur Bali, . . .	Kapur Barus, . . .	MALAY.
Kamfer, . . .	Alcanfor, . . .	PORT., SP.
Camphro, . . .	Kamfora, . . .	RUS.
Kampfer, . . .	Karpura, . . .	SANSK.
Kupros, . . .	Capuru, . . .	SINGH.
Kopher, . . .	Capuram, . . .	TAM.
Canfora, . . .	Carpuramu, . . .	TEL.

Chinese Camphor tree, Chang-nau, Pien-nau, Shau-nau, Chang-chau-fu, Shau-chau-fu.

Camphor of Borneo, or Barus Camphor, Lung-nau-hiang, Po-luh-hiang, Hoh-po-lo-hiang, Ping-pien, Mei-hwa-pien.

The camphor of commerce is obtained from two trees, one of which, *Dryobalanops camphora*, grows in Sumatra, Borneo, and Labuan; the other, the *Camphora officinalis*, or *Laurus camphora*, grows in China. The names for it in many languages of the world, are sufficiently alike to show that a knowledge of the substance came from one source, probably China or Sumatra, and the words Dutch, or Japan, or Tub camphor, Barus camphor, China camphor, Formosa camphor, have been added merely to indicate the place of production. The unrefined or crude camphor of commerce is the product of the *Camphora officinalis*, and is of two kinds, viz. Dutch or Japan, or Tub camphor, so called from being brought from Batavia to Europe in tubs, containing 1 cwt. to 1½ cwt., and is in the form of lumps of pinkish grains. The second kind is called ordinary crude camphor, China camphor, and Formosa camphor, much of it being produced in Formosa, shipped to China, and re-shipped to Europe in square chests lined with lead-foil, and containing from 1½ to 1 cwt. In this crude state it consists of dirty greyish grains. This crude material is obtained by distillation from the roots and wood of the *Camphora officinalis* tree, which is chopped up and split up into billets, which are boiled in plenty of water in large boilers, with a conical or round straw cover smeared with clay outside; and, as the water boils, the crude camphor is deposited on the inner straw. Refined camphor is obtained from this product by

distillation, which is carried on in various ways; but the whole process consists in using two round vessels, inverting one above the other, and adding 2 per cent. of quicklime in order to absorb any oil, and distil from one vessel to another. Two earthen pots, luted together, answer perfectly, a very small aperture being left for the escape of air on the first application of heat. It is largely refined in Bombay. In China it is prepared very carelessly, by soaking in water the chipped wood of the root, trunk, and branches, and subliming it.

The *Borneo* or *Barus* camphor, the *Lung-naou-hiang* or 'dragon's-brain perfume' of the Chinese, is a product of the *Dryobalanops camphora*, *Colebrooke*. It is much esteemed in China, and is called by the natives and in commerce, 'kapur barus,' or *Baruscamp*phor, to distinguish it from the product of the *Camphora officinalis*, or *Japan camphor*. It derives its name of *Barus* from a place in Sumatra where it is produced, and whence it was probably first exported. The tree is found on all the northern parts of Borneo, and is said to be particularly abundant in the country of the *Kyan*, in the interior, on the *Bintulu* and *Rejang* rivers. The produce, though so valued by the Chinese, is not much used by the natives, though it is occasionally taken inwardly as a medicine. The price in China of the *Borneo* camphor is said to be higher than that of *Japan*, in the proportion of twenty to one; it has been supposed that this disproportion is caused more by some fancies of the consumer than any real distinction of properties. As not one in ten trees is found to produce camphor, its presence must be caused by a particular state, either of vigour or disease, in the tree; and the camphor collectors cut notches in the trees, in order, before felling, to ascertain whether they are likely to produce camphor. It is said that in those which produce it, the younger and smaller trees are often found to be quite as prolific as the older and larger trees. The camphor is found in a concrete state in the crevices or fissures of the wood, so that it can only be extracted by felling the tree, which is afterwards cut into blocks and split into wedges, and the camphor, which is white and transparent, is then taken out. An essential oil is also found in hollows in the wood, which the natives crystallize artificially; but the camphor thus obtained is not so much esteemed as that found naturally crystallized. From the oldest and richest trees they rarely collect more than two ounces. After a long stay in the woods, frequently of three months, during which they may fell a hundred trees, a party of thirty persons rarely bring away more than 15 or 20 pounds of solid camphor, worth from 200 to 250 dollars. The variety and price of this costly substance are enhanced by a custom which has immemorially prevailed among the *Batta* race, of delaying the burial of every person who, during his life, had a claim to the title of *raja* (of which each village has one) until some rice, sown on the day of his death, has sprung up, grown, and borne fruit. The corpse, till then kept above ground among the living, is now, with these ears of rice, committed to the earth, like the grain six months before, and thus the hope is emblematically expressed that, as a new life arises from the seed, so another life shall begin for man after his death. During this time the corpse is kept in the house, enclosed in a coffin

made of the hollowed trunk of a durinon, and the whole space between the coffin and the body is filled with pounded camphor, for the purchase of which the family of the deceased *raja* frequently impoverish themselves. *Camphor oil* is also said to be collected by incisions at the base of the trunk, from which the clear balsamic juice is very slowly discharged. *Barus* camphor is getting scarce, as the tree must be destroyed to obtain it. About 800 pikuls are annually sent to China. *Malay* camphor is more fragrant and not so pungent as the Chinese camphor. 983 tubs of camphor were exported from *Java* in 1843; 625 bales were imported in 1843, the produce of the *Japanese* empire, and 559 pikuls exported from *Canton* in 1844. In *London* in 1880 it was selling at 85s. the cwt. The wood of the camphor tree is good timber, suited for house and ship building. The liquid camphor of the same tree appears of the nature of camphogen. Dr. A. T. Thomson, by passing a current of oxygen gas through it, converted it into camphor. In *Spain*, a camphor has been obtained from some of the *Labiata*. In *Burma* considerable quantities have been produced from the *Blumea grandis*; and a similar chemical product has been obtained in *Europe*, by passing a stream of muriatic gas through turpentine. It is largely employed in medicine; and to burn camphor before an idol forms part of the ritual of the *Hindus*.—*Low's Sarawak*, pp. 44–46; *Marsden's Sumatra*, p. 150; *Royle's Mat. Med.*; *Crawford's Dictionary*, p. 81; *Simmonds' Comm. Prod.*; *O'Sh.*; *Mason's Tenasserim*; *Tomlinson*, pp. 287–8.

CAMPHORA, a genus of plants belonging to the *Lauraceæ*, of which three species, *C. glandulifera*, *C. officinarum*, and *C. porrecta* occur in the south and east of Asia.

Camphora glandulifera, *Nees*, is the *Laurus glandulifera*, *Wall.* It is a tree of the *Nepal* mountains, with small yellowish-green odoriferous flowers, and pale yellow light wood, smelling strongly of camphor while fresh. It is weak and unfit for furniture. Its bark has been named the *sassafras* of *Nepal*. Dr. Royle says (*Ill. Him. Bot.*) it contains solid grains of camphor in its wood.—*Voigt*, p. 308; *Royle*, p. 324; *O'Sh.* p. 545.

Camphora officinarum, *Bauh.* *Laurus camphora*, *Linn.*, officinal camphor tree, camphor laurel. A considerable tree of *Cochin-China*, *Formosa*, *Japan*, and *China*, principally near *Chiuchu*, in the province of *Foh-kien*; also in *Canton*, *Hu-peh*, *Kwang-si*, and *Foh-kien*. The tree furnishes excellent planks, beams, and boards. Camphor is diffused through all parts of the plant; the root, trunk, and branches, when cut into chips, are boiled in water and then sublimed into inverted straw cones contained within earthen capitals. It is thus obtained in the form of crude camphor, chiefly from the province of *Foh-kien* and the opposite island of *Formosa*, but some of good quality is also procured from *Japan*. It is sometimes imported into *Britain* from *Batavia*.—*Williams' Middle Kingdom*, ii. p. 137; *O'Shaughnessy*, p. 455.

<i>Camphora porrecta</i> , <i>Linn.</i>	
<i>C. parthenoxylon</i> , <i>Nees</i> .	<i>Laurus pseudo sassafras</i> ,
<i>Laurus</i> „ <i>Jack.</i>	<i>Blain.</i>

A tree of *Penang*, *Sumatra*, and *Java*, furnishing a strong wood, which is durable if kept dry.—*Voigt*; *Roxb.* ii. 708.

Camphor Oil, *Kapur minyak*, *MALAY*; the liquid camphor of the *Dryobalanops camphora* tree.

Camphor Cup, a cup for use after the manner of the quassia-wood or 'bitter cup.'

Camphor Wood of Sumatra is from the *Dryobalanops camphora*, of which the wood is hard, compact, and brownish-coloured. The fragrant, light-coloured, soft wood of which the trunks and boxes of China are made, is supposed to be that of the camphor tree of Japan, *Laurus camphora*, or *Camphora officinarum*. Camphor-wood is valuable for the construction of chests and almirahs, as its powerful odour protects the contents from the ravages of white ants and other insects. The Martaban camphor-wood, *Laurus sassafras*, is from a very large tree, scattered sparsely throughout the Tenasserim provinces. Wallich wrote that it was very like *Laurus glandulifera*, which furnishes the sassafras and camphor-wood of Nepal. The Karens call it the 'tree galanga,' from its fragrance.—*Holtz; Mason; O'Shaughnessy*.

CAMPNOSPERMA ZEYLANICUM. *Thw.* A tree 30 to 40 feet high, not uncommon in Ceylon, growing on the banks of streams at Ratnapura and lower part of the Saffragam district up to 4000 feet elevation.—*Beddome*, p. 168.

CAMPONG. MALAY. A village, an enclosure, a courtyard, the Anglo-Indian compound, the Hindi angan.

CAMRUKH. HIND. *Averrhoa carambola*.

CAM SING MOON or *Cum sing moon*, a safe harbour in the Canton river, formed between the southern port of Keow island, and a point of Macao island called Bluff Head. It was much frequented by opium vessels.—*Horsburgh*.

CAM-WOOD, a dyewood from the *Baphia nitida* of Africa, used in dyeing the bright red of English bandana handkerchiefs.

CANAAN. This name, according to one authority, is from Chana, the ancient name of Phœnicia. According to another, Canaan or Palestine was called after Canaan, the youngest son of Ham.

CANADA TURPENTINE, or Canada balsam, is obtained from the *Abies balsamea* in Canada. Between the bark and the wood of the trunks and branches of the trees are vesicles containing the oleo-resin, which exudes when they are broken. Canada balsam is much used by varnish-makers in the manufacture of some of the most transparent varnishes. It is also extensively employed by opticians as a cement. The great value of Canada balsam for optical purposes, depends on its transparency and its refractive power, which is nearly equal to that of glass. When used to connect the pieces of an achromatic lens, it prevents the loss of light by reflection, and excludes moisture and other foreign bodies from the space between the surfaces of the glasses. In Nicol prisms (single image prisms of Iceland spar) it serves the important purpose of transmitting the ordinary ray, and of interrupting the passage of the extraordinary one; its index of refraction being intermediate between that of Iceland spar for the ordinary ray, and that of the same substance for the extraordinary ray.—*Pereira*.

CANAGA. CAN., TEL. *Pongamia glabra*.

CANALS for irrigation are of the greatest importance in all the tropical countries liable to the calamities resulting from excessive droughts.

The great canal of the world is that of *Suez*, connecting the Red Sea with the Mediterranean, and separating Africa from Asia. It was com-

menced 25th April 1859, the first ships passed through it in the year 1867, and it was formally opened for traffic in December 1869. It had occupied ten years of labour to bring it to that state, and cost to that period 13 millions sterling = 13 krór of rupees.

In British India the great works are the Ganges Canal, the Eastern Jumna Canal, the Agra Canals, and the Lower Ganges Canal.

The *Multan Inundation Canals* supply the district of Multan between the Sutlej and the Chenab, where rain hardly ever falls, and convert it into a succession of beautiful gardens, shaded by palm trees. There is a burning sun above and canals flowing below.

The rude inundation *canals of Gujaira* and other districts of the Bari Doab above Multan, are of value, and from those in the rich country of Muzaffargarh, between the Chenab and the Indus, the land is made one sheet of cultivation.

The inundation canals of the *Shahpur* district draw their supply from the Jhelum.

The *Derajat Canals* run parallel with the river Indus and fill during the periods of inundation.

The *Khadar* lands of the Bahawalpur State are 10 or 12 miles wide, and border the Indus. They are irrigated by inundation canals from the Sutlej.

The aggregate length of the *Upper Sutlej Canals* is 213 miles.

The *Khanwah Canal* leaves the Sutlej at a point 20 miles below Ferozpur, by a mouth 90 feet wide, narrowing to 20 feet at the end of its length of 55 miles.

The *Sohag Canal*, 73½ miles long, leaves the Sutlej a little below the mouth of the Khanwah, and irrigates the country between that canal and the river.

The *Pura Nullah* is a continuation of the Sohag, and is connected with the old bed of the Beas by a channel called Nawabbin.

The *Kutora Nullah* is to the north of the Khanwah canal, and it was proposed to bring into it the waters of the Sutlej.

The canals of the *Lower Sutlej* and the *Chenab* fertilize the Multan district, irrigating 120,000 acres, belonging to 120,000 villagers. In 1871-72 they were 39 in number, with an aggregate length of 632 miles; 11 had been made by the British.

The *Indus Canals* include those of Muzaffarnagar and the Derajat. There are 66 in the Muzaffarnagar district, drawing their supplies from the Indus and the Chenab. Those of the Derajat are 592 miles in aggregate length, of which, up to 1871-72, 108 had been constructed by the British.

The *Dera Ghazi Khan* district and the Sind Sagar Doab need irrigation.

The *Peshawur valley*, with the exception of a small opening towards the Indus, is encircled by mountains, and comprises 2400 square miles, divided into two by the river Kabul, which enters the plain at Michni. It is joined midway by the Swat river flowing from the N.W., and entering the plain at Abazai it waters Yusufzai by many channels, the Bara from the S.W. entering the plain at Shaikhan.

Bahawalpur State extends for 300 miles along the left banks of the Sutlej, Chenab, and Indus. In former times, the Ghaggar, the ancient Saraswati, flowed through it from the Siwalik mountains to the Indus, between Rori and Uch, parallel

with the Sutlej, but it dried up; and ruins of old towns are dotted along its banks, and all the once fertile tract is now barren and sandy, drifted from the desert, and is known as the Bahawalpur Bangar. To the west of the Bangar are narrow strips 10 or 12 miles wide, along the left banks of the Indus, Chenab, and Sutlej, called the Khadar. In 1867-70, Major Minchin, political agent, led a canal 105 miles long from the Sutlej, and called it the Ford-wah. He also formed six small canals in the Khairpur district.

Below *Khairpur*, are the Vahind, the Khanwah, Naoranga, Kutubwah, Sultanwah, Mubarakwah, Minchinwah, Baruswah, Sadikwah, and the Hari-ari or Fertiliser, all of them large channels 100 to 200 feet wide, irrigating a vast area by an endless network of branches, and annually cleared out.

From the *Indus* nine canals lead, two of them excavated by the British; and in July and August the Indus floods the face of the country, the waters reuniting to run into the eastern Narra, a great channel belonging to the Sind system of irrigation.

In the *Bari Doab*, between the Beas and Ravi rivers, there has been a great State canal completed; but canals are still needed for the 7,000,000 of acres unirrigated in the Rechna Doab, between the Ravi and Chenab; the Chuch Doab, between the Chenab and Jhelum; and the Sind Sagor Doab, between the Jhelum and the Indus.

That of the Bari Doab up to 1871-72 cost upwards of £2,000,000, and was irrigating 300,000 acres.

The great *Sirhind Canal*, commenced in 1871-72, was projected to draw its waters from the Sutlej, to irrigate an immense area now desert, and the total cost was estimated at £2,980,427, a third part of which was to be borne by the native states.

After the rivers of the Panjab unite at Mithankot, the Indus flows for 450 miles to the sea, through the arid rainless country of Sind. Here artificial irrigation is essential to cultivation. The river during bygone ages has silted up, and its banks are now greatly above the alluvial plain. When the bed attains a certain height the water falls over, and since historical times the river has been changing its course to the west. The banks are permanent only at Sukkur; at Jharrak, where it is bound by rocky banks; and at Kotri, by hills and deep tenacious clayey soil. The canals are excavations carried away from the river in an oblique direction, so as to secure as great a fall as possible. They vary from 10 to 100 feet in width, and from 4 to 10 feet in depth, and none are deep enough to draw off water from the river except during inundations. The irrigation is carried on by the water flowing into the channels during the inundations, or it is raised by the aid of machinery or Persian wheels. Some of the canals are 70 and 80 miles long. On the western or right bank, the chief canals are the Sind, 66½ miles, Ghar or Larkhana, Bigari, and Western Narra.

On the east or left bank of the Indus river is the Eastern Narra. It was an ancient channel which passed through the Thur, and had near it among the sand-hills, about 400 small dunds or lakes or bottoms. In 1859 a channel from the river at Rori was led into it, and its channel was dammed at places to prevent the escape of water into the large dunds.

Two canals have been led from the Eastern

Narra,—the Mitrau, which in 1866 had 190 miles open, and irrigated 156,803 acres, and the Thur canal, irrigating 38,000 acres. Under Sir Bartle Frere's administration, the ancient channel of the Narra, 120 miles long, was reopened on the 7th May 1867, to distribute water over the vast plain of Mirpur.

From Hyderabad southwards, the *Fullali* canal is the main feeder of irrigation channels. Originally it was a natural branch of the Indus, which it rejoined 16 miles below Hyderabad; this was stopped by a dam in the time of the Amirs, and its waters were sent into the Gaja, the Guini, and other canals.

In 1861 the cost of clearances of the main canals was £41,041, but the allotment in 1871-72 was insufficient. Canals of a permanent character, proposed to be led off the Indus from Sukkur, Jharak, and Kotri; and the first of these, from Sukkur, was opened in 1870.

In the *valley of the Ganges*, above its junction with the Jumna at Allahabad, and in the whole length of the country through which the Jumna flows, the rainfall does not exceed 30 inches. Firoz Shah, emperor of Delhi between 1351 and 1388, drew a canal from the Jumna to water his favourite hunting ground at Hissar, but it had long fallen into disrepair, when Akbar in 1568 ordered its restoration. In 1626, Shah Jahan's engineer, Ali Murdan Khan, projected a canal in the Doab, which shortly ceased to flow. He also led one from that of Firoz, to convey water to the city of Delhi. The Delhi canal crossed the lowland by a masonry aqueduct, traversed the Aravalli hills by a canal cut through the solid rock, 60 feet deep at the crest, and flowed through the city in a masonry bed, throwing off innumerable minor streams; but in 1753 this branch ceased to flow. When the British came into possession, all these works had fallen into ruin, and in 1820 the canal of Firoz was restored from where the Jumna issues from the Siwalik hills. At Delhi it separates into a branch which enters the city at the Kabul gate, and part of it flows down the Chandni Chouk; the other branch follows that of Firoz to Hissar, and sends off the Rohitak branch. The united length is 445 miles, and that of the watercourses 728 miles; and the total outlay up to 1871-72 was £282,517, from about 447,171 acres.

The *Ganges Canal*, commenced in 1818, was opened on the 8th April 1854. It is wholly a British project. The water is brought from Ganes Ghat on the Ganges, 2½ miles north of the town of Hurdwar, close to the foot of the Siwalik mountains. The main channel is 318 miles long, and the branches 306 and the distributaries 3078, in aggregate length; and 767,000 acres in 5061 villages are irrigated by them. The principal engineer was Sir Proby Cautley. Commencing at Hurdwar, as the river Ganges issues from the mountains, it runs through the country on the right bank of the river. One of its many branches re-enters the Ganges at Cawnpur, and another joins the river Jumna. The canal is carried by a great viaduct, three miles long, over the river Salani. It is of earth, and is protected by a wall of masonry and a bridge of fifteen arches, each of fifty feet of span, through the volume of another river, and beneath the bed of a third, and was planned to re-enter the Ganges at Benares. The Solani aqueduct leaves a clear waterway of

700 feet, and cost £300,000. The total cost of the canal was not less than two millions sterling (£2,036,000). It takes about 75 per cent. of the water of the Ganges, whose volume, however, is not diminished. It traverses the Doab, and by countless branches, dykes, and channels, irrigates almost every village throughout a tract of country upwards of 800 miles in length, and is supplied to every tiller on payment of a water tax. At Hurdwar, the pass through which it issues, at the lowest ebb discharges about 7000 cubic feet of water every second. Its current was too strong for navigation, and the expected advantages from it for irrigation were not attained. It is carried through Hurdwar, Alighur, Cawnpur, Hamirpur (530 miles), with branches to Futehghur, Bulandshahr, and Koel. A ridge of land rises slightly above the level of the adjacent country, and runs along the centre of the Doab, sloping down on the one side to the Jumna, and on the other to the Ganges. The canal has been constructed on the top of this ridge to the vicinity of Alighur, whence it diverges into two channels, one to Cawnpur, and the other to Hamirpur and Etawa. On the completion of the canal, it was opened in April 1854, and the water admitted on an aqueduct across the Solani river at Roorkee. The engineer, Sir Proby Cautley, on leaving Calcutta, was honoured with a salute from the batteries of Fort William, and was favourably noticed in the Government Gazette.

The *Agra Canal* has been led off from the Jumna below Dehli, to irrigate the lands of Dehli, Agra, and Muttra. It irrigates 350,000 acres. The *Futtehpur Sikri* reservoir may also be mentioned.

The *Rohilkhand Canals* comprise the Nehtore, the Nugina, the Bygool, 180 miles, the Muradabad, the Paba, 13 miles long, and the Kailas canals; and the Kitcha and Dhora watercourses, 32 miles. They irrigate the belt of country along the Terai, where much rice is grown.

There are five canals in the *Dehra valley*, between the Ganges and the Jumna, aggregating 67 miles in length, and irrigating 11,039 acres. There are ten miles of rajbaha.

The tanks in Mhairwara in 1871-72 had a total area of 8675, and irrigated 14,826 acres. They were largely constructed by Colonels Hall and Dixon.

The canals of the *N. W. Provinces* have irrigated on the average 1,065,450 acres.

A dam has been thrown across the *Sone* river, and two main channels lead off from it.

The *Midnapur Canal* was partly open in 1871-72. It is 52 miles long, to irrigate 200,000 acres.

Mention may be made of the *Arrah Canal*, 70 miles long, to irrigate 430,000 acres, and of the *Patna Canal*, 84 miles long, to irrigate 390,000 acres.

The Humirpore and Jhansi irrigation works consist of lakes and reservoirs, partly natural, partly artificial, and are under the direct control of the civil authorities (*Friend of India; Annals of Indian Administration*).

The *Mahanadi* river drains the fertile plain of Chatisgarh, in the Central Provinces, and falls into the Bay of Bengal after a course of 529 miles. Its basin covers an area of 45,000 square miles. It is liable to heavy but short-lived floods, and the province of Orissa at the deltas has long

suffered from them. The E.I. Irrigation Company undertook to form a great anicut, and it was commenced in 1862; they failed, and in 1868 transferred their works to the Government for £1,050,000, but the water has never brought remunerative rates.

Canals, as watercourses for cultivation, have only since 1862 been in progress in the Bombay Presidency. A weir of 1550 feet has been thrown across the Girnar river, in Kandesh, and one across the Panjur. In Sultanah a weir 2000 feet long has been drawn across the Kistna, to feed channels 45 miles long. A large tank has been formed at Koorgaum near Barsee, a reservoir at Mukti near Dhulia, and a tank at Hurtola. A reservoir has been constructed near Sholapur at a cost of £90,000. Large works have been planned for Gujerat and the W. Dekhan, and others for the Central Provinces; for works from the Pench river north of Nagpur, and from the Warda river to its south, and for the waters of the Betwa river to be led to irrigate Bundelkhand, which has been fifteen times desolated by famine in the last three centuries. One-third of the water will go to the Patiala State.

In *Madras*, of the native engineering works, those for the application of water to irrigate fields and gardens, wells, tanks, and river channels take the first rank. There are innumerable tanks or artificial lakes of various sizes formed in basins, that near Cummum being seven miles in circumference. The most northern of its rivers, the *Godavery*, at Rajamundry, when about fifty-five miles from the sea, divides into two streams, forming a delta of rich alluvial country. A little above this point the river is 2000 yards broad, but it soon expands at Dowlaishwaram into a width of three times that extent, parted, however, by islands into four branches. An anicut has there been thrown across the channel, the united lengths of the four dams being 3955 yards. Upwards of two miles of stream is blocked up by a solid, well-protected mass of stone, in lime cement, with a breadth at the base of nearly 130 feet, and a height of twelve feet above the natural surface of the water. Along the left bank of the river is one channel, another to Cocanada, and other channels; the total being 840 miles of main channel, irrigating 780,000 acres of land. In 1871-72 there were 56,471 boats and rafts engaged in traffic on this canal.

The rajas of Vijayanagar in 1521 constructed nine dams across the Tumbudra river, and had channels of 89 miles of total length. The old travellers, Conti and Cæsar Frederick, tell of cool streams flowing through the streets of the city. In 1860 the Madras Canal and Irrigation Company undertook to bring a navigation and irrigation canal from the river, throwing an anicut across at Sankasala; its history is useful.

It was intended to provide for the continuous irrigation of the Bellary district, of the Koondey valley and the Nellore district. The weir across the Tumbudra at Sankasala was 1500 yards in total length of clear overfall, which was broken into two lengths by an intervening island. The Hindry Aqueduct carried the canal, 90 feet broad and 8 feet deep clear waterway, over that river, at an elevation of 32 feet, by 40-foot arches, the length between the abutments being 651 feet; the cost of the first 75 miles was £8710 per mile; the next 115 miles cost £2900 per mile; and the whole

canal cost £5260 per mile. It has not produced all the hoped-for benefits for irrigation, and for navigation it has not been applied. Indeed, navigation and irrigation seem incompatible.

At *Baiswara*, 60 miles from the sea, an anicut or dam 1250 yards long, with a base of 305 feet, has been thrown across the Kistna river, and its channels irrigate the Guntur and Masulipatam districts. The delta covers an area of 10,000 square miles. From the E. side the main channel is divided into two branches, one to Masulipatam, the other to Ellora. It was constructed by General Charles Orr. The main western channel divides into the Nizampatam and Commamur branches.

The *Krishna Canal*, in the Bombay Presidency, is excavated from above the dam near Kurvar in the Satara district.

The *Ekrak tank* is four miles north of Sholapur on the Adela, a branch of the river Bhima. Its dam is 7200 feet long, and 72 feet high in the centre, and the lake formed is $6\frac{1}{2}$ square miles. It submerged five villages, two of them in the Nizam's territory, but 35,840 acres are brought under the influence of the tank.

An anicut was completed across the *Pennar* river at Nellore in 1855. It was breached by the hurricane of 1857, but restored in 1861, and in 1863 the irrigated area was 32,874 acres. It is 520 yards in length.

The *Cauvery* and *Colerun* anicuts are the most ancient in Southern India, and those to which the British first directed their attention. At the head of the island of Srirangam, near Trichinopoly, the main river divides into two branches, the southern retaining the name of Cauvery, the northern being called the Colerun; and the tendency was for the Cauvery to silt up, and the whole of the water to pour into the Colerun. The native anicut had been built about the third century of the Christian era, and consisted of a solid mass of rough stone 1080 feet long and 40 feet broad, irrigating 669,000 acres. Sir Arthur Cotton threw a masonry anicut, 750 yards long, across the Colerun, resting it on three lines of wells 6 feet in diameter in the sandy bed of the river, which has thrown the water into the Cauvery and cleared the bed of the Colerun. In 1836 an anicut was thrown across the Colerun to regulate the supply of water for S. Arcot. Colonel Sim was the engineer.

The *Mauri Conwai* river is in Mysore, with the *Nundoor Sreeramadwara* and *Masechully* reservoirs.

The *Periar* river runs to waste into the *Cochin* marine lagoon, and it has been proposed to turn it into the eastern districts by a cutting 140 feet deep and a dam 60 feet high, and add to the water supply of *Madura* and *Ramnad*, now obtained from the *Vaiga*.

The *Tambrapurni* river waters the *Tinnevely* district. It has been crossed by several dams in very ancient times.

The *East Coast Canal* from *Madras* to *Sadras* is for traffic.

The *Grand Canal of China* has been led through and near a series of lakes, some of considerable extent, extending all the way from *Nan Wang*, in lat. $35^{\circ} 55' N.$, long. $116^{\circ} 30' E.$, down to the *Yang-tze-kiang*.—*Moral and Material Progress*, 1871-2; *Markham's Embassy*; *Ann. Ind. Adm.*; *Report on the Administration of the Panjab*; *Powell's Handbook, Econ. Prod. Panjab*; *Jackson's Manual*. See *Irrigation*.

CANAMBOO. TAM. *Crotalaria juncea*, Linn.

CANARA, a maritime province on the western coast of the Peninsula of India, with an area of 7800 square miles. It is arranged by the British into two revenue districts, North Canara or collectorate of Honore, and South Canara as far south as the Chundragherry river, and from that river commences Malabar. Canara formed part of the Mysore Dominions, and came under British rule after the fall of Seringapatam in 1799. Below the mountains the country is rocky, mountainous, intersected by numerous mountain streams running to the sea, with exceedingly fertile valleys. The *Garsuppa* falls of the *Sherranuttu* river have four portions. The *Grand Fall* falls perpendicularly 880 feet. Three languages are spoken, viz., Tulu in the ancient Tuluva country, Malealam as far north as the Chundragherry river, and Canarese in the taluks of Honawar and Cundapore above the Ghats. In the Buntwal taluk are colossal images of *Gonata Raya*, carved out of single blocks of granite, and placed on the tops of hills. The interior of the Jain temple at *Moodbiddery* is beautiful. Near Cundapore, close to the sea, is a small fresh-water lake, in which the *Hoowana* or flower fish is caught.

North Canara, since the 1st Feby. 1862, has been administered by the Bombay Presidency. It lies between lat. $13^{\circ} 52'$ and $15^{\circ} 31' N.$, and long. $74^{\circ} 10'$ and $75^{\circ} 7' E.$, with an area of 4235 sq. m., and in 1872 a population of 398,406 persons, 364,402 of them being Hindus. The *Havik* Brahmans cultivate betel-nut gardens. The *Nanaiti* Mahomedans are seamen; they are well to do, and represent the colonies of Arab merchants of whom a remnant still exists along the coast from *Gogo* southwards. There are *Sidi* Mahomedans, descendants of African slaves whom the Portuguese held. They have the woolly hair and black skin of the pure African negro; are poor, and cultivate little patches rudely in the forests.

South Canara is under the *Madras* Presidency. It lies between lat. $14^{\circ} 31'$ and $15^{\circ} 31' N.$ and long. $74^{\circ} 1'$ and $75^{\circ} 2' E.$, and has as its eastern boundary the Western Ghats, through which the *Manjarabad*, *Kolur*, and other passes lead up to *Mysore* and *Coorg*; its area is 3902 sq. m. The people, about a million in number, consist of *Saraswati*, *Konkani*, and *Sivalik* Brahmans, *Bant*, *Koragar*; Portuguese of mixed descent, native Christians, *Mopla* of Arab descent. The aborigines include the *Malekudi*, *Koragar*, *Holyar*. The *Malekudi* are a forest race who practise the *Kumari* cultivation, but labour on coffee estates. The languages spoken are *Tulu*, *Malealam*, *Canarese*, and *Konkani*, besides *Urdu* and *English*. *Tulu*, the language of *Tuluva*, is spoken between *Udipi* and *Kumbila* by about 180,000 people, south of the *Puishwenni* river and elsewhere; with *Moplas*, *Malealam* is the prevailing tongue. Prior to British rule, the *Holyar* were the slaves of the *Wargdar* or proprietors, and even yet continue in a state of modified serfdom.—*Findlay*; *Imp. Gaz.*; *Madras Records*.

CANARESE or *Karnataka* is an ancient classical and a modern dialect, the former containing different inflexional terminations. *Hala Kannada*, is an ancient written character formerly used by the Canarese people in writing. Canarese is a language in the centre of the Indian Peninsula,

spoken by about nine millions of people, partly under the Hyderabad, the Mysore, and the British Governments of Bombay and Madras. The ancient Hindu term, Karnatica, comprehended all the high table-land in the south of India above the Eastern and Western Ghats, and its rulers seem never to have held sway beneath the Ghats; though in the present day, by a strange fatality, it is now only the countries below the Ghats, the Carnatic on the east and Canara on the west, to which the name of the ancient Karnatica kingdom has come to be applied, and its name is now never given to the Bala Ghat, or country above the Ghats.

The great bulk of the Canarese-speaking people are of one race, who are pure Dravidians. They have adopted the Jangama sectarian faith, the followers of which, by their tenets, ought to have no caste distinctions. Most of their subdivisions are restricted to vegetable products as food; and so carefully do they act up to these, that no one of these vegetarians will even bring any living creature for sale to any one of a flesh-eating people. Their sect is, perhaps, amongst the most exclusive of all in India. It is doubtless this tenderness towards animal life that guides them to their avocations, which are mostly those of civil life, cultivators and shopkeepers, and may have led to their non-resistance to invaders; but in all the great armies which the British have formed during the past century, of the Canarese Jangama sectarians not more than a few thousand men may have become soldiers, and certainly not even one of that portion who abstain from animal food. The Teling and Canarese nations have, till recently, continued equally advanced as to elementary school education; and though, in this respect, both races fall short of the progress made by the energetic, restless, impetuous Tamil people, they are greatly in advance of the Mahratta. For nearly 200 years the inland tract occupied by the Canarese-speaking people had been traversed by great armies, bent on conquest, and since the fall of the great Vijayanagar dynasty all comers seem to have crossed this tract without opposition.

Canarese, properly the Kannadi or Karnataka language, is bordered by the Tamil and the Telugu on the east. It is spoken throughout the plateau of Mysore and in the western districts of the Nizam's territory as far north as the village of Murkundah, lying 30 miles south-west of Beder. Also it is spoken in part of the ancient Tuluva country on the Malabar coast, now long designated as Canara, a name which it acquired from having been subjected for centuries to the rule of Canarese princes. But in Canara, the Malealam, the Konkani, and the Tuluva are also spoken, though less extensively than the Canarese. From A.D. 800 to 1500 it was free from any admixture of foreign words, but since then Sanskrit words have been extensively introduced; and during the supremacy of Hyder Ali and Tipu, Urdu words were largely imported into it in Mysore, while it added Mahratti in the N.W. and Telugu on its N.E. The Canarese character differs slightly from the Telugu, from which it has been borrowed, but the characters used for Tamil, Malealam, and Telugu are quite distinct from each other. The ancient Canarese character, however, entirely differs from that of the modern Telugu, and the Canarese

language differs even more widely from the Telugu than it does from the Tamil. There is an ancient dialect of the Canarese language current, as well as modern, the latter differing from the former by the use of different inflexional terminations. The ancient Canarese dialect, however, has no connection with the Sanskrit character to which that name has been given, in which, viz. the Hala Kannada, many very ancient inscriptions in the Mahratta country as well as in Mysore are found.

CANARIUM, a genus of plants of the natural order Burseraceæ. Wight says the resinous juice of *C. commune* has properties similar to copaiba, while the kernels of the seed afford by expression a bland, edible oil. *C. strictum*, Roxb., is known in Malabar under the name of the 'black dammer tree,' in contradistinction to the *Vateria Indica*, which is the 'white dammer tree.' This tree is rather common in the alpine forests about Courtallum in the Tinnevely district, and is regularly rented there for the sake of its dammer. The dammer is transparent, and of a deep brownish-yellow or amber colour when held between the eye and the light, but when adhering to the tree has a bright, shining, black appearance. The fruit is a very hard, three-celled, oval nut, tapering at each end.

Under the names Dhoop and Googul, Dr. Gibson mentions two species of Canarium in Canara and Sunda, one on the ghats above, and the second species of great size cultivated near Bilgil and at Siddapore. The choice gum-resin afforded by these trees is extensively used in the arts, and exported both inland and to the coast.—Wight, *III.*; Dr. Gibson. See Boswellia; Resins.

CANARIUM BENGALENSE. Roxb. An immense forest tree of Assam, Sylhet, and the adjacent mountainous countries, flowering in May and June. From fissures or wounds in the bark, a large quantity of very pure, clear, amber-coloured resin exudes, which soon becomes hard and brittle, and is not unlike copal. But in the Calcutta bazar it was only valued at from Rs. 2 to Rs. 3 for seven maunds of eighty pounds each.—O'Shaughnessy, p. 285; Voigt, p. 149; Roxb. *iii.* p. 136; Royle's *Him. Bot.* p. 177.

CANARIUM BRUNNEUM. Thw.

Scutinanthe brunnea, Thw.

Maha-bulu-mora, . . . SINGH.

A tree 50 to 60 feet high, growing in the Central Provinces of Ceylon at elevations of 2000 to 3000 feet.—Beddome, *Fl. Sylt.* p. 127.

CANARIUM COMMUNE. Linn. Java almond.

<i>C. mehenbethene</i> , Gert.	Colophonia Mauritiana,
<i>Amyris Zeylanica</i> , Retz.	D. C.
<i>Balsamodendron Zeylanicum</i> , Kunth.	<i>Bursera paniculata</i> , Lam., Rumph.

Bois de Colophane, . FR. | Jungli Badam, . . HIND.

Grows in the Mauritius, Ceylon, the Peninsula of India, the Moluccas, and the Indian Archipelago. It was brought from the Moluccas to the Calcutta Botanic Garden, but in Roxburgh's time did not thrive, owing to the coldness of the winter months. The bark yields an abundance of limpid oil, with a pungent turpentine smell, congealing into a buttery, camphoraceous mass. It has the same properties as balsam of copaiba, for which it could be substituted; and is said to yield East Indian elemi. Its nuts are three-cornered

and edible, but apt to produce diarrhoea.—*Roxb.* iii. p. 177; *O'Shaughnessy*, p. 288; *Voigt*, pp. 148-9.

CANARIUM GENTICULATUM. *M. Cl.* A large and valuable timber tree found in the Pegu valley, but scarce. The wood is white-coloured, and adapted to house-building.—*M. Clelland*.

CANARIUM NIGRUM. *Roxb.*

Marignia acutifolia, *D. C.* | *Dammara nigra*, *Rumph.*

A tree of Amboyna and the Moluccas; a reddish, soft, viscid, heavy-smelling substance exudes from wounds in its bark.—*Voigt*, p. 149.

CANARIUM PIMELA. *Smith.* *Pimela nigrum*.

Luh-lan, Wu-lan, . . . CHIN. | T'sing-kwo, . . . CHIN.
Kan-lan, " | Chinese olive, . . . ENO.

This tree grows in the Chinese provinces of Kwang-si and Poh-kien. Its pointed oblong fruits, from $1\frac{1}{4}$ to $1\frac{1}{2}$ inch long, are eaten green or shrivelled, and are often preserved in salt. At Amoy the hard kernels are often beautifully carved for heads. Lan-tang, a kind of gum or black dammer, is obtained from its branches, bark, and leaves. The kernels of the *Pimela alba* (Luh-lan) are similarly used.—*Smith*.

CANARIUM STRICTUM. *Roxb.*

Dammara nigra legitima, *Rumph.*

Manda-dup, . . . BENG. | Thelli mara, . . . MALEAL.
Gugal, Dup, " | Kongilam maram, . . . TAM.
Black dammer tree, ENG. | Karapa Kongilamu, . . .
Canari, MALEAL.

This very beautiful, large tree is most abundant in all the moist ghat forests on the western side of the Madras and Bombay Presidencies up to 4000 and 4500 feet, but it does not occur in Ceylon or elsewhere, and it is never seen in dry forests. Its brilliant crimson foliage makes it a most beautiful sight when in young leaf. The leaves of saplings and young trees are very much larger than those of full-grown trees.

This is the black dammer tree of Tinnevely and Malabar, and is so named in contradistinction to the *Vateria Indica*, which is called the white dammer tree. *C. strictum* is common near Courtallum, where it is rented for its dammer. While adherent to the tree, it gives a bright, shining black tint, but by translucent light is of a deep brownish-yellow or amber colour. The balsam exudes in a very fluid state, and trickles down the trunk, where it gradually hardens by exposure to the sun; the fresh resin continuing to flow over that already hardened, gives the stalactitic appearance to the huge lumps of resin, in which form the resin is brought to the market. It is perfectly homogeneous, has a vitreous fracture. It is insoluble in cold, but partially soluble in boiling alcohol on the addition of camphor; when powdered, it is readily soluble in oil of turpentine. Powdered and burnt on the fire, it emits a more resinous smell, and burns with more smoke, than white dammer. The size of the lumps of this resin, together with its colour and the peculiarity of shape already mentioned, suffice to distinguish it from other Indian resins.—*M. E. J. R.*; *Voigt*, 149; *Roxb.* iii. 138. See Gums and Resins.

CANARIUM SYLVESTRE. *Gertn.*

C. Sylvestre alterum, *Rum.* | *Schinus Bengalisensis*, *S.*

A tree of Chittagong and Assam. Timber hard, tough, and close-grained, used for furniture.

CANARIUM ZEYLANICUM. *Blume*,

C. Balsamiferum, *Moon.* | *Kakoona-gass*, . . . SINGH.

Occupies the warm, moister parts of Ceylon up to an elevation of 1500 feet. A resinous balsam exudes copiously from the trunk of this tree, which, mixed with paddy chaff, is used by the natives for burning, as the smoke drives away snakes from the domicile. *C. coccineo-bracteatum* and *C. euphyllum* are also known.—*Thur.* i. p. 79.

CANARY SEED. *Phalaris canariensis*, *Linn.* Mainly used to feed caged birds. The annual British consumption may be estimated at about 10,000 quarters, of which about 8000 are grown in England, especially in the Isle of Thanet and Essex.

CANAVALIA GLADIATA. *D. C.* Sword-bean.

<i>Dolichos gladius</i> , <i>Roxb.</i>	|	<i>Dolichos ensiformis</i> , <i>Lour.</i>
Mekhun, BENG.	|	Thambatin, TAM.
Makhum-shim, . . . . . "	|	Segapu Thambatin? . . . "
Makshun-shim, . . . . . "	|	Tela "
Pai-noung-nee, BURM.	|	Tamma; Chama? . . . TEL.
Kadsambal, HIND.	|	Segapu? "
Shimlee, SANSK.		

This plant has four varieties, viz. :—

a. Flowers and seeds red.	|	c. Flowers and seeds white
b. Flowers white, seeds red.	|	d. Flowers red, seeds grey.

The three first of these are cultivated for their large swordlike pods; that with the white flowers and white seeds is considered the best, and is often two feet long. It is esteemed by Europeans.—*Mason*; *Voigt*.

CANAVALIA OBTUSIFOLIA. *D. C.*,

Koyli avari, TAM.

Is a common plant on the Coromandel coast, where it occurs along with the *Ipomea pescaprae*, and is a useful binder of loose sand.—*Cleghorn*.

CANAVALIA VIROSA. *W. and A.*

<i>Dolichos virosus</i> , <i>Roxb.</i>	|	<i>Dolichos ensiformis</i> , <i>Lour.</i>
Kalo Shim, BENG.	|	Wild sword-bean, . . . ENG.
Kat Shim, . . . . . "	|	Adavi chamma, . . . TEL.
Kudsumbar of BOMBAY.	|	Karu chamma, "

Grows on the Coromandel and Konkan coast, and on the seashore of the Tenasserim provinces, in great profusion.—*Mason*.

CANAXA. This battle, in which the younger Cyrus lost his life, was fought in the plain between Hit and Felugia.—*Kinneir's Memoir*, p. 267.

CANCER, the crab genus of crustaceæ of the family Canceridæ; several species occur in Southern and Eastern Asia. *C. carnifex*, *C. hydromus*, *C. corallinus*, *C. maculatus*, and *C. tenax* have been transferred to the genera *Gecarcinus*, *Carpilius*, and *Rupellia*.

<i>Cancer roseus</i> , <i>Ed.</i> , Red Sea.
<i>C. integerrimus</i> , <i>Ed.</i> , Indian Ocean.
<i>C. marginatus</i> , <i>Ed.</i> , Red Sea.
<i>C. ocyroe</i> , <i>Ed.</i> , Asia seas.
<i>C. manillatus</i> , <i>Ed.</i> , Australia.
<i>C. sculptus</i> , <i>Ed.</i> , Red Sea.
<i>C. limbatus</i> , <i>Ed.</i> , Red Sea.
<i>C. savignii</i> , <i>Ed.</i> , Red Sea, Indian Ocean.
<i>C. calculosus</i> , <i>Ed.</i> , New Holland.

CANCHI, the Tamil name of Conjeveram.

CANCHI PANDU. TEL. *Solanum nigrum*.

CANCHORI VER. TAM. *Tragia involucrata*.

CANCRA. HIND. *Pavetta Indica*.

CANDAHAR, a town in Afghanistan, in long. 65° 28' E., and lat. 31° 37' N., 3484 feet above the sea. It is the Khenta of the Vendidad. According to Elphinstone (Caulbul, p. 425), there has been a city here since the time of Alexander, and the ancient city stood till the reign of the Ghilzai, when Shah Husain founded a new city under

the name of Husuinabad. Nadir Shah attempted again to alter the site of the town, and built Nadirabad; at last Ahmad Shah founded the present city, to which he gave the name of Ahmad Shahi, and the title of Ashraf-ul-Balad, or the noblest of cities; but the old name of Candahar still prevails among the people, though it has lost its rhyming addition of Dar-ul-Karar, or the abode of quiet. Ahmad Shah himself marked out the limits of the present city, and laid down the regular plan, which is still so remarkable in its execution. The houses in the town are from 16,000 to 20,000; the population, 45,000 in number, consist of different tribes. Houses as under:—

Aakyi Khel, . . .	50	Dowlat Shahi, . . .	50	Makuzai, . . .	100
Arab, . . .	50	Ghilzai, . . .	100	Nurzai, . . .	600
Alikozai, . . .	650	Hindus, . . .	300	Pathvan, . . .	1240
Alizai, . . .	200	Ishakzai, . . .	600	Pathana, . . .	200
Achakzai, . . .	150	Ismail Zai, . . .	100	Popalzai, . . .	600
Babi and Babur, . . .	200	Kakar, . . .	550	Pirian, . . .	100
Barakzai, . . .	940	Kashmiri, . . .	100	Saddazai, . . .	100
Bardurani, . . .	150	Kalezai, . . .	350	Sarkani, . . .	200
Bamezai, . . .	400	Kharoti, . . .	200	Turks, . . .	50
Bisakzai, . . .	100	Khugiani, . . .	150	Others, etc., . . .	440
		Madozai, . . .	150		

The more remarkable objects are the tomb of Ahmad Shah, the public baths, the citadel. It was occupied by the British Indian army from 20th April 1839 till the 8th August 1843, and was re-occupied in 1879. See Afghanistan; Kandahar.

CANDALLA, in lat. 20° 3' N., and long. 74° 49' E., in the Dekhan, N.W. of Aurangabad. The entrance to the caves of Candalla is 1932 feet above the sea.—*Wils. Schl.* See Kandalla.

CANDALOO. TEL. *Cajanus Indicus.*

CANDELARIA, or candle-fly, is found in Labuan and Sarawak. It has a curved and pointed head. It frequents the tops of lofty trees.

CANDESH. See Kandesh.

CANDIA or Crete, an island in the Mediterranean. Mount Ida, famous in history, is in the centre of this island.

CANDLES.

Kaazen, . . .	DUT.	Diyan; Lalin, . . .	MALAY.
Chandelle, . . .	FR.	Kandil, . . .	"
Kerzen; Lichter, . . .	GER.	Vellaz, . . .	PORT. SP.
Butti, . . .	GUJ., HIND.	Swjetschi, . . .	RUS.
Candelle, . . .	IT.	Vatti, . . .	TAM., TEL.

Almost all the candles in use in the East Indies are imported from Europe and America. For lighting, the natives use oil lamps of various shapes, often of metal fixed on an iron spike, which they stick into the ground. Wax and tallow candles are, however, made in several parts of India,—in Vizagapatam, Goa, Malabar, Patna, Calcutta, Poddapore, and Berhampur; but the large importations of candles from Europe have caused the manufacture to decline considerably. It is useful to place two thin instead of one thick wick in each, and the wicks should be plaited, not twisted. Wax candles improve with age. The candles used in Japan are made of an oil said to be pressed out of the seeds of the *Rhus succedanea*? This oil becomes, when concrete, of the consistence of tallow, and is not so hard as wax. The province of Fetsigo, more particularly, produces this tree, and consequently supplies the greatest quantity of this oil. In the eastern parts of China, the product of the tallow tree, *Stillingia sebifera*, and beef and hog's tallow in the south,

are used in the manufacture of candles. Wax is only employed to encase the tallow or lard, which, from the heat of the climate and its unclarified condition, never becomes hard.—*Royle, Arts, etc., of India*, p. 484; *Thunberg's Travels*, iii. p. 188; *Rohde, MSS.*

CANDLESTICKS.

Kandelars, . . .	DUT.	Candellieri, . . .	IT.
Chandeliers, . . .	FR.	Podaweschnikii, . . .	RUS.
Leuchter, . . .	GER.	Candeleros, . . .	SP.

Candlesticks are in general use in the East Indies, but to shield them from the wind are usually covered with glass shades.

CANDLE-TREE, Candle-nut tree, *Aleurites triloba*. Its nuts are strung together and used for candles. Torches are made from the candle-wood of *Demerara*.

The Candle-tree, *Parmantiera cereifera*, might be introduced into India. It is confined to the valley of the river Chagres (Isthmus of Panama), where it forms entire forests. In entering them a person might almost fancy himself transported into a chandler's shop. From all the stems and lower branches of the trees hang long cylindrical fruits, of a yellow wax colour, so much resembling a candle as to have given rise to the popular appellation, 'Palo de velas,' candle-tree. The fruit serves for food to numerous herds of cattle.—*Dr. Seeman.*

CANDY, a province of Ceylon, formed out of an ancient kingdom, subdued in the early part of the 19th century by the British. The town of Candy was taken on the 19th July 1819.

CANDY, Sugar-candy.

Kurri shakur, GUJ., HIN.	Kal-kandu, . . .	TAM.
Gula batu; Batu, MALAY.	Kala kanda, . . .	TEL.
Nabhat, . . .	PERS.	

Crystallized sugar was at one time largely imported into India from China, but is now made in many parts of India.

CANDY, a measure of weight equal to 500 lbs. in some places, but it varies in different towns. A candy (khundee) in one place differs very much from the candy of another place. Again, a candy, for instance, of metal, is not the same as a candy of tobacco; and there is a different candy for cotton and sugar. The candy used in buying is not always the same in the same place as the candy used in selling.

CANER. HIND. *Nerium odorum.*

CANES or Rattans.

Canne, roseau, . . .	FR.	Bed, . . .	HIND., PERS.
Baton, raton, . . .	"	Canao, . . .	SP.
Rohrt, . . .	GER.	Junco de Indias, . . .	"
Nathur, . . .	GUJ.	Perambugal, . . .	TAM.
Kotan, . . .	MALAY.	Bettamulu, . . .	TEL.
Canua, bastone, . . .	IT.		

Canes are the produce of the *Calamus* genus of palms, of which the species are numerous in the islands of the Indian Archipelago, in the Malayan Peninsula, in the humid parts of the Madras territories, in the forests of the districts of Chittagong, Sylhet, and Assam, along the foot of the Himalaya as far north as the Dehra Doon, where a species is found which Griffith named *C. Royleanus*; and he applied the name of *C. Roxburghii* to the plant which Roxburgh called *C. rotang*, common in Bengal and on the Coromandel coast. Both are used for all the ordinary purposes of cane; as also are *C. tenuis* of Assam, *C. gracilis*, *C. extensus*, and others. But those of the shops

are gathered indiscriminately, and it is not possible to say from what particular species they come. *C. rotang* has, however, been said to furnish the stouter, and *C. Scipionum* the slenderer sorts. Mr. Griffith considered *C. Scipionum* of Loureiro to be the species which yields the well-known Malacca cane, but the plant does not appear about Malacca, and the canes are stated to be imported from Siak, on the opposite coast of Sumatra. Even this does not, however, seem to be correct, as the Malacca Committee for the Exhibition of 1862 sent Malacca canes, as cut from the jungle, previous to being subjected to the process of smoking, which gives the cane the rich brown tint so much admired in Europe. The stem of *Calamus verus* is described as being 100 feet long; that of *C. oblongus*, 300 to 400 feet; of *C. rudentum*, upwards of 500 feet; and of *C. extensus*, as much as 600 feet. Rumphius even states that one kind attains the extraordinary length of 1200 feet (vol. v. p. 100). In the Tenasserim Provinces there are numerous species indigenous in the forest, and the Karens have different names for seventeen species or varieties, used extensively instead of cordage. The stays of the masts in Burmese boats are usually made of rattans, and they are split up into strings for the innumerable purposes to which cord and twine are usually applied. All that gives stability to bamboo houses, is the rattan which ties them together. The *Calamus rudentum* of Loureiro is manufactured at Malacca into cables, and is employed for dragging great weights and binding wild elephants. A cane bridge over the Temishang in the Khassya hills is 312 feet long, and 50 feet above the river. It oscillates greatly. —*Mason's Tenasserim*; *Royle, Ill. Him. Bot.*; *Royle, Fib. Pl.*; *Cat. Ex. 1862*. See *Calamus*.

CANGNI. HIND. *Panicum Italicum*.

CANGOO. TAM. A Timnevelly wood of a whitish brown colour, used for handspikes and wheelwright's work.—*Col. Frith*.

CANGUE, a wooden yoke, by which Chinese criminals are punished, and are led about the streets as a spectacle to the people. It consists of two large pieces of wood fitting into each other, and having one to three openings, through which the head and one or both hands are drawn, according to the greatness of the crime. Such a yoke weighs from 50 to 100 lbs., and presses so heavily upon the back and shoulder, that the criminal is unable to feed himself, and must wait till some compassionate person lifts the food to his mouth. Such punishment is inflicted for periods varying from a few days to several months, and in the latter case it is almost always fatal. This instrument of torture makes a man resemble the foot of a huge heavy table.—*Sinnett's Lady's Voyage*, p. 49; *Huc, Chinese Empire*, i. p. 272.

CANHO. SIND. *Citrullus cucurbita*, Linn.

CANIATCHI. Cani, land, and Atchi, heritage. In the south of India, land property. Tod thinks the atchi, like the ote and awut, Rajput terminations, implies clanship.—*Tod's Rajast.* i. 496.

CANIDÆ, the dog tribe, family of mammals, comprising the genera *Canis*, *Cuon*, and *Vulpes*, of which the common dog, *Canis familiaris*, and its many varieties, the wolf, *Canis pallipes*, and the jackal, *Canis aureus*, occur in India. The wild dogs of India have been removed to the genus *Cuon*, and the foxes belong to the genus *Vulpes*.

CANIS? in Penang, a large tree, used for door frames.—*Col. Frith*.

CANIS AUREUS. Linn. The jackal.

<i>C. aureus</i> Indicus, <i>Hodgs.</i>	<i>Lupus aureus</i> , <i>Kæmpf.</i>
Siar, sial, BENG.	Kola Ghidar, HIN., MAHR.
Nari, CAN.	Shighal, PERS.
Shighal, DUK.	Srigala, SANSK.
Jackhals, DUT.	Nakka, TEL.

The jackal is found in a great part of Asia, Syria, Arabia, Persia, and in all India west of the Brahmaputra. Along the line of the Ganges, in Lower Bengal, they move in packs, and eat indiscriminately. In the Peninsula they are of larger size, and seen singly or in pairs; and in the Dekhan live much on wild fruits; the coffee bean of the plantations is largely eaten by them. Their cry when moving at night is very disagreeable, and even when clicketing their call is unpleasant. Native sportsmen believe that an old jackal, which they call bhalu, is in constant attendance on the tiger, and whenever his cry is heard, which is peculiar and different from that of the jackal generally, the vicinity of a tiger is confidently pronounced. Sir W. Elliot says he has frequently heard the cry attributed to the bhalu.—*Cat. of Mammalia*; *Jerdon*. See Jackal.

CANIS FAMILIARIS. Linn. Var. Indica.

The Pariah, Polygar, and Brinjara dogs, and Tibetan mastiff. The Brinjara dog is a large, powerful animal, in shape and with limbs somewhat resembling the Persian greyhound, only much more powerful. The breed seems, however, to be disappearing from amongst the Brinjara tandas, and replaced by the ordinary pariah. In 1868 the editor met a great tando on the march at Ajunta, but only pariah dogs amongst them. Indeed, between the Brinjara dog and many of the pariah dogs there is so great a resemblance, as to impress with the belief that they are the same variety. In many villages are pariah dogs in no way distinguishable from the Brinjara. The large Brinjara dog is an eager hunter of the larger game, a faithful, intelligent, and good watch-dog, but does not crave attention. The Polygar dog is large and powerful, and is peculiar in being without hair. The Beder race of Zorapore and Ghurghunta hunt the wild boar with a large powerful breed of dogs. A peculiar breed is raised by the raja of Rampur, seemingly between the Persian greyhound and the Tibetan mastiff. The Tibetans have a mastiff, a terrier, and a poodle, and the two last are pets, and the poodle is often fed for the table. The Chinese dogs from Japan, the original of the King Charles spaniel, is sometimes seen in India. The *C. Aegyptiacus*, *C. cauda*, *C. Dukhunensis*, do not need separate remark. See Dog.

Canis laniger, *Hodgs.*, Tibet white wolf.

Chankodi, KAMAON.	Changu, TIB.
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Himalaya.

Canis niger, *Jerd.*, black wolf of Tibet.

Hakpo-chanko, TIB.

Canis pallipes, *Sykes*, *Blyth*, Indian wolf.

C. lupus, *rur.*, Ell.

Bighada, BUNDELKH.	Landgab, HIND.
Tola, CAN.	Nakra, "
Bhera, Bheria,	Hundar, Hurar,
Byria, Bharya, HIND.	Toralu, TEL.

The wolf roams in Central and Southern India; they are never seen singly, but always in large or small packs. If a single one appear, it

may be assumed that others of the pack are near. They are bold, even in the vicinity of towns, scarcely moving off from a horseman. Length from muzzle to insertion of tail, 36 to 37 inches; do. of tail, 16 to 17½; height at shoulder, 24 to 26; length of head, 10; circumference of do., 16 to 17; weight of an adult female, 42 lbs. The wolves of the Southern Mahratta country generally hunt in packs, chase the goat antelope (*Gazella Arabica*), steal round the herd of Antelope cervicapra, and conceal themselves on different sides till an opportunity offers of seizing one of them unawares, as they approach, whilst grazing, to one or other of their hidden assailants. On one occasion, three wolves were seen to chase a herd of gazelle across a ravine, in which two others were lying in wait. They succeeded in seizing a female gazelle, which was taken from them. They have frequently been seen to course and run down hares and foxes; and it is a common belief of the ryots that in open plains, where there is no cover or concealment, they scrape a hole in the earth, in which one of the pack lies down and remains hid, while the others drive the herd of antelope over him. Their chief prey, however, is sheep, and the shepherds say that part of the pack attack and keep the dogs in play, while others carry off their prey; and that, if pursued, they follow the same plan, part turning and checking the dogs, while the rest drag away the carcass, till they evade pursuit. Instances are not uncommon of their attacking man. In 1875, 1061 persons were devoured by wolves; in the next five years, 887, 564, 815, 492, and 347; and from four to six hundred are annually destroyed. Sometimes a large wolf is seen to seek his prey singly. These are called won-tola, and reckoned particularly fierce. In Oudh and the Panjab they destroy large numbers of children. Their ordinary prey are deer, sheep; and in pursuit, they display great sagacity, throwing out flanking parties, and surrounding game. In 1866 the editor witnessed a sambur run close up to a railway train in Berar, halt as the train moved on, and it then fled at speed; looking beyond, a body of wolves were seen in pursuit.

CANJANG-KIRAL. TAM. *Basella alba*, Linn.

CANJARA. TAM. MALEAL. A tree which grows to about 2½ feet in diameter, and from 25 to 30 high, of little use or durability. The natives value its fruit, which is very intoxicating, and used by them as a medicine.—*Edge, M. and C.*

CANJARA. SANSK. *Daucus carota*.

CANJAROTE POOYA, a river which formed originally the southern boundary of Canara, separating it from Travancore.

CANKRI KAI. MALEAL. *Cucumis sativus*, L.

CANNA, a genus of flowering plants of the order Marantaceæ. *C. Indica*, or Indian shot, is one species. Voigt enumerates sixteen as having been in the Calcutta Gardens. *C. edulis* of Peru furnishes one of the arrowroots of commerce.

CANNABIS SATIVA. Linn. Indian hemp.

Cannabis Indica, Rumph. | *Cannabis orientalis*, Roxb.
 Kinnub, ARAB. Cheroo-Kansjava, MALEAL.
 Bin; Bon, BURM. Bhang; Ganjika, SANSK.
 Hinnup, Kinnup, DUT. Vijja,
 Hanf, GER. Mat-kansha, SINGH.
 Kannabis, GR. Ganjyai, TEL.
 Ganja; Bhang, HIND. Kinnabis, YUNANI.
 Laeki-lacki, MALAY. Defrunoos,
 Joru Kansjava, "

The hemp plant is grown in Persia, Syria, Arabia, and throughout India, in some places for its fibre; in others, and generally, for its intoxicating products. It is common in waste places in many parts of the Panjab plains, Cis and Trans Indus, and much more abundant and large (reaching 9 or 10 and 12 or 14 feet in height at times) in many places in the Himalaya, up to 10,000 feet. It appears to be more commonly cultivated in Garhwal, etc., than in any part of the Panjab Himalaya, but in the latter it is frequently grown in small patches on the Sutlej and Bias at 5000 to 7000 feet; and Dr. Stewart had seen fields at 10,000 on the Chenab in Lahoul. On the Sutlej the seeds of the cultivated plant are roasted and eaten in small quantity with wheat. The most important product of this plant is the resinous exudation, which does not appear to be produced below a certain elevation in the hills. It is used as a narcotic, as are the dried tops of the plant. The latter are gathered for home use in many parts of the hills, and also occasionally in the plains (they are largely used in Sind, where the plant appears to be grown in the fields for this purpose), but the great source of the charras is Turkestan. Dr. Cayley states that in October 1867 this drug to the value of Rs. 44,760 was imported from Yarkand into Leh, and Rs. 19,422 worth of bhang was exported from the latter to the Panjab in the same month. During 1867, 1830 maunds were imported from Yarkand to Leh, and 817 maunds were sent from the latter southward by various routes. The drug is mostly consumed with tobacco in a hookah, its use extending to Afghanistan, according to Bellew (Dr. J. Stewart, P. Plants, p. 216). In 1859, an experimental consignment of two tons of Himalayan hemp was valued in the English market at from £30 to £32 per ton. The price at Lahore is about £15 or £16 per ton.

The hemp plant secretes the resinous principle in its leaves, on which account these, as well as the charras collected from off the young tops of the stem and flowers, is highly esteemed in all eastern countries, on account of its exhilarating and intoxicating properties. Among the Arabs the hemp has a variety of names, as 'the increaser of pleasure,' 'the cementer of friendship,' etc. By its name of Haalheesh it is often mentioned in the works of travellers in Egypt, Arabia, and Syria; while the name of Bhang is not less known in the far east.

Of the intoxicating products, *Charras* is the concreted resinous exudation from the leaves, slender stems, and flowers, collected in the Himmlaya, Yarkand, and Herat. It is eaten in a sweetmeat, or smoked like ganja.

Ganja, the dried hemp plant which has flowered, and from which the resin has not been removed; also the whole plant. It is smoked in a water pipe until a peculiar contraction of the throat is felt.

Bhang, and *Subza*, and *Sidhi*, the larger leaves and capules without the stalks; also *Sukho* or *Sawia*, the small leaves, seeds, and husks ground and made up with water, milk, etc. These are highly aphrodisiac, but often lead to impotency, insanity, delirium tremens, catalepsy.

Mayum is a confection made of bhang, ganja, charras, opium, poppy seeds, datura leaves and seeds, cloves, mastic, cinnamon, aniseed, cumin, cardamoms, made up with milk or ghi and sugar.

Tadhal is a preparation from blang, poppy seeds, and other similar articles. It is believed to have cooling properties. The *charras* produces visionary ecstatic pleasures, sometimes catalepsy; or the intoxicant, with his arms outstretched, balances on his toes as if soaring. The misuse of blang is a frequent cause of insanity.—*Materia Medica*; *O'Shaughnessy*, p. 581; *Powell*, *Hand-book*; *Cleghorn*, *Pamj. Rept.* p. 66.

CANNÆ EDULIS. The tubers afford 'Tousles-mois,' a farinaceous food used by invalids.—*Mason*; *Ains. Mat. Med.* 142; *Riddell*.

CANNÆ INDICA. *Linn.* Indian shot.

C. orientalis, *Rorh.* | *C. Chinensis*, *Willde.*
Surbo jaya, . . . BENG. *Silarumba*, . . . SANSK.
Bud da-tha-ra-na, . . . BURM. *Kundamani cheddi*, TAM.
Ukkilbar ke munke, DUK. *Kull valei manni*, .
Sabba jaya, HAKIK, HIND. *Guri Genza chettu*, TEL.
Katu Balu, . . . MALEAL. *Krishna tamarachettu*, .

There are several varieties of this, the colours of the flowers scarlet, orange, red and yellow mixed. Varieties are often seen in gardens, and much cultivated by the Burmese for the seeds, which they use for sacred beads.

CANNANORE, a seaport town on the west coast of India, in long. 75° 24' E., and lat. 11° 51' N., known to the natives by the name of Kouryal-bandar. In 1871, population 10,265, rainfall 97 inches. It is a military cantonment, and has been known to Europeans from the earliest times. 'Proceeding along the sea-coast, says Bartolomeo, you then arrive at Cannanore, a town with a castle, and subject to the government of queen Collatiri, by the Europeans called Collastri. This city is of great antiquity, and the king of Collatiri belongs to the first class of the Indian princes. The capital of the kingdom of Cannanore, called also Colanada, lies in the latitude of 11° 50', and is distinguished by the same name. The whole surrounding district, which extends towards the north as far as Mount Dolly, is inhabited by the Molandi, who live merely by piracy. These sea-robbers are mentioned by Pliny, Arrian, Ptolemy, and other ancient authors. They unite themselves to other pirates who reside on the Angedib islands, near Goa, and capture all the small vessels which sail from Goa to Cochin. The huts in which their wives and children live, stand on the eastern side of Mount Dolly.' This mountain, which forms a cape or headland, lies in the latitude of 12° 5'; and here Malabar or Malenla, properly so called, ends. Cannanore is now in British territory, held by a body of European and native soldiers; it is a place of large trade. There is a fort which was built by the Dutch in 1656, and the cantonment lies to its north. Across the bay from the fort is the quarter occupied by the Mopla race of Mahomedans.—*Imp. Gaz.*; *Voyage to East Indies*.

CANNIBAL.

Adam-khor, . . . PERS. | Kai-tangata, . . . MADRI.

Cannibals still exist in several parts of the world. The *Birhor* of the Central Provinces of India are said to eat their aged relatives, who invite their relations to kill and eat them.

The *Aghora*, a disgusting sect of saiva Hindus, are said to have eaten human beings till close to the middle of the 19th century.

Tribes of the *Batta* race in Sumatra, and some of the New Zealanders, continued to do so until towards the latter part of the 19th century.

Mr. Stanley and the missionaries describe many cannibal tribes on the banks of the Congo river in Central Africa, and of other races on the New Calabar river. The *Immithlunga*, a Zulu tribe, and the *Moshesh* in S. Africa, were cannibals; also the *Fan* of the west coast of Central Africa, and the *Niam* or *Sandeh* in the region of the Gazelle Nile, and the light-coloured civilised *Monbutto* race on the Uelle river. In the instance of the Basuto people the habit had newly arisen.

At the time of the Tai-ping insurrection in China, an English merchant in Shanghai met his servant in the street carrying home the heart of a rebel, with the avowed intention of eating it to increase his own courage.

The ancient Mexicans were cannibals.

Papua of New Guinea, the Solomon Islands, New Hebrides, New Caledonia, and the Fiji group, were cannibals. It is common to all Polynesians, in the Marquesas Islands, the Hawai group, Tahiti, and the Maori of New Zealand. The Australians are not habitual cannibals. The odious rite exists with considerable civilisation. The natives of the Solomon Islands are dwarfish, but they build canoes which are 'perfect gems of beauty,' and they have a fine sense of vocal harmony. The New Hebrideans have a yet more inveterate love than these vocalists for human flesh. In one of the islands, Aneityum, the natives have been cured of the bad habit by the missionaries; but the population, which was 12,000, is now but a sixth part of that total. Epidemic diseases and a sudden change from barbarism to civilisation are the causes. Nowhere was the passion for human flesh more violent than with the Fijians. At great feasts twenty bodies would be served up at once. No solemnity was perfect in the times before British domination without human sacrifices. When a chief died, wives and slaves were buried with him. When a chief's house was built, a slave was buried under each pole which held it up. The Fijian had a firm belief in a future state, in which the actual condition of the dying person is perpetuated. Thus a young man, being unable to eat, was buried alive by his father at his own request, lest he should grow thin and weak. Somewhat luxuriously he asked to be strangled first; but 'he was scolded and told to be quiet, and be buried like other people, and give no more trouble; and he was buried accordingly.'

Anthropophagy has vanished with the people themselves from among the Iroquois and Algonkin; it has disappeared from among the people of the high plains of Anahuac, the Indians of Peru, and most Brazilian races. It is increasingly circumscribed in the Southern Ocean by the dying out of the cannibal races, and the pressure of white settlers. The number of cannibals is still, however, very considerable. The Batta of Sumatra, according to Friedman, may be reckoned at 200,000 souls; the cannibals of the Niger delta at 100,000; the Fan, according to Fleuriot de Langle, at 80,000; the cave-dwellers of the Basuto country (about a tenth of the whole population), at 10,000; the Niam-Niam, at about 500,000; the Miranha and Mesay, according to Marloy, at 2000; other South American cannibals, at 1000; the Australian aborigines? at 50,000; the Melanesians (without including New Guinea), 1,000,000,—a total at the present of 1,943,000 human beings addicted to

anthropophagy. A native paper of British India, in A.D. 1870, stated that a person had been transported for life by the Session Court at Jhansi, on a charge of eating dead human bodies stolen from graves. It was said that he had lived on this fare for a number of years.—*P. M. Gazette*; *Richard Andre in the Ergänzungs blätter*; *Dalton's Ethnology*; *Newbold's British Settlements*, ii. pp. 370-373; *Peschel, Races of Man*, p. 161. See Aghora; Batta; Birhor.

CANNING. Charles John Canning was born at Gloucester Lodge, Brompton, in 1812. He was the third son of George Canning, a celebrated statesman, and was educated at Christ Church, Oxford. He entered upon public life in 1836, as member for Warwickshire. In the following year his mother died, and he went to the House of Lords. When Sir R. Peel came into power in 1841, he was appointed Under Secretary for Foreign Affairs. For a month or two, in the reconstructed ministry of Sir Robert Peel, Lord Canning was Chief Commissioner of Woods and Forests; but in July 1846 he resigned with his party, but returned with the Coalition Ministry in 1853. In the government of Lord Aberdeen, Lord Canning was Postmaster-General, and distinguished himself by his administrative capacity. He made many changes in the internal organization of the department, and set on foot the practice of submitting annually to Parliament a report of the work, and especially the progress, achieved by the post office. He held the same appointment for a short time in Lord Palmerston's cabinet. Lord Canning began his rule in India on the last day of February 1856, and in 1857 the army of Bengal revolted, and much of Northern India rebelled, under the guidance of Nana Rao of Bittur, and of the emperor of Delhi. The years 1857-1858 were employed in suppressing the mutiny, in which he displayed great boldness and self-reliance, and when the embers of the insurrection alone remained, he was the first to urge clemency.

On the 3d March 1858 he issued a proclamation declaratory of the policy he intended to pursue with regard to the talukdars of Oudh, which he afterwards modified, on the remonstrance of Sir James Outram, then Chief Commissioner. Oudh had been the centre of the rebellion, and on its suppression the inhabitants were disarmed, and the forts of the petty chieftains dismantled. He was the first Viceroy of India, having been appointed Viceroy and Governor-General 1st November 1858, and 12th March 1862. During his administration, the loyalty of the Sikhs and of the Nepal ruler, Sir Jung Bahadur, was conspicuous; equally so was the perfidy of Nana Rao and the emperor of Delhi. Several servants of Government, Sir Henry Lawrence, Sir John (Lord) Lawrence, Sir Robert Montgomery, Sir Colin Campbell, Sir Nevil Chamberlain, Sir George Balfour, Sir Hugh Rose, Sir Robert (Lord) Napier, Sir Hope Grant, Sir Henry Norman, Sir Bartle Frere, by their labours in war and in peace did the state service, and won honours for themselves. Earl Canning, on his return home, was appointed a Knight of the Garter by letters patent, dated Balmoral, May 21, but he died at London on the 17th June 1862.

CANNON.

Top, HIND. | Peringi gul, . . TAM., TEL.
Mariam Bad-il, . . MALAY.

The cannon used for war in Eastern and Southern Asia by the eastern nations, or by the Europeans, are either imported from Europe and America, or are cast in the foundries of the several countries. The British have a considerable foundry near Calcutta, but cannon of the more recently invented forms are all imported from Britain. From the Persian term top, is the Hindi term top-khana, a battery of artillery. The British in India have mounted batteries drawn by bullocks, ponies, horses, and mules, also camel batteries and elephant batteries, and mountain trains.

CANOES.

Canot, FR. | Canoa, SP.
Barchetta, IT.

Canoes are largely used in India as river and ferry boats, and have shapes and forms to suit the rivers and waters. Canoes at Calicut are hewn out of the trunk of the jack-fruit tree, *Artocarpus integrifolia*. Coast canoes of Point de Galle and the Malabar coast have weather-boards on an outrigger in the form of a smaller canoe; they are sharp at both ends, and beat to windward without tacking. The Jangar of the Malabar coast, for rivers, is a kind of canoe. The rivers of the Northern Circars are crossed by a double canoe, formed out of two pieces of a coconut or a palmyra tree hollowed, and kept apart by cross ties of wood. Canoes scooped out from single trees are in universal use in Burma, the Malay Peninsula, and the Malay and Eastern Archipelago. Canoes of the Solomon Islands have no outriggers. The practice of standing up to paddle canoes seems to be general throughout the coasts of New Guinea. The brown-coloured natives of the Archipelago all sit, or 'squat,' while paddling their canoes, excepting the Baju Laut, or sea gipsies, who stand like the Papuans, and give as a reason for assuming this posture, the superior facilities it affords them of seeing turtle, and of chasing them when discovered. See Boats.

CANOON-GO. ARAB., PERS. The village clerk; an expounder of the rent terms, literally, rule-teller.

CANQPUS STAR. See Kumbha yoni.

CANOUIJ, in the N.W. Provinces, in lat. 27° 2' 30" N., long. 79° 58' E., with a population of 17,093. It is said to have existed from 1000 B.C., and to have been founded by two sons of Cush, who named it Mahadya, afterwards changed to Kanya kulja. It was not unfrequently called Gadhipoora Jye-Chand. It was held by the Rahtor dynasty from the close of the 5th to that of the 12th century, and terminated with Jye-Chand, A.D. 1194. In S. 1268 (A.D. 1212), eighteen years after its fall, Seoji and Saitram, grandsons of Jye-Chand, abandoned Canouj, and with two hundred retainers journeyed westward to the desert,—according to some of the chronicles, on a pilgrimage to the shrine of Dwarica, but according to others, to carve their fortunes in fresh fields. Seoji, on the banks of the Looni, exterminated, at a feast, the Dabeyes of Mehwo, and soon after killed Mohesdas, chief of the Gohils of Kherdhar. One of the chronicles asserts that it was Asothama, the successor of Seoji, who conquered 'the land of Kher' from the Gohils; and he established his brother Soning in Eedur, a small principality on the frontiers of Gujerat, appertaining, as did Mehwo, to the Dabey race; it was during the mātum, a period of mourning for one of its princes,

that the young Rahtor destroyed the clan. His descendants are distinguished as the Katondia Rahtor. The third brother, Uja, carried his forays as far as the extremity of the Surashtra Peninsula, where he decapitated Beekumsi, the Chawara chieftain of Okamundala, and established himself. For this act his branch became known as the Badhail; and the Badhail are still in considerable number in that farthest track of ancient Hinduism. Its wars with Dehli accelerated the ruin of Hindu independence. This kingdom appears to have been called Panchala. It seems to have been a long but narrow territory, extending on the east to Nepal (which it included), and on the west along the Chambal and Banas as far as Ajmir. The identity of Canouj and Panchala is assumed in Menu 11. 19. Its limits, as assigned in the Mahabharata, are made out by connecting notes (vol. iii. p. 135, vol. iv. p. 142) in the Oriental Magazine. These boundaries, enlarged a little on the south and on the west, are the same as those assigned by Colonel Tod to the same kingdom at the time of the Mahomedan invasion. Mr. James Fergusson (p. 735) gives the following rulers in the Christian era—

Vasu Deva.	Reign.	A.D.
Vikramaditya I. of Ujjain,	25	470?
Sri Harsha,	20	495
Vikramaditya II., the Great,	35	515
Siladitya I. of Malwa,	30	550
Prabhu Kara,	25	580
Raja Verddhana,	5	605
Siladitya II. of Canouj,	40	610
Died and troubles commence,		648-650

—*Tod's Rajasthan*, ii. p. 13; *As. Jl.* 1817; *Elphinstone's History of India*, i. p. 402; *Ferg.* p. 735.

CANOUJIA, a clan of Gaur Brahmans. Also tribes in the north-west of India, who trace their origin from the city of Canouj. The Canouj Brahmans are met with from the Himalaya to the Narbada and Bay of Bengal. They have many subdivisions, but the khutkool or six houses—(1) Sandel-got, (2) Oopmun-got, (3) Bharadwaj-got, (4) Bhuradwaj-got, (5) Koteayun or Visvamitra-got, (6) Kusip-got, and (6½) Sakrint-got—are chief. The honour of an alliance with the privileged khutkool is such, that, like the Kulin Brahmans of Bengal, some of them have as many as twenty or twenty-five wives. Amongst them are included the Sunaluk'hee, who are said to have been made Brahmans by Raja Ram Bug'hel, when he was in a hurry to make a sacrifice, but as he could not perform it without assembling a lakh and a quarter of Brahmans, he collected people from all classes and parts, and invested them with the juneoo, or sacred thread. Others say that Manik Chand, the brother of the famous Jye-chand Rahtor, others that one of the Surneyt rajas, others that the redoubtable Ram Chunder himself, was the manufacturer. However this may be, the Sunaluk'hee rank very low in the scale of Brahmans.—*Gloss.*; *Elliot, Supp.*

CANRU. HIND. *Flacourtia sepriaria*.

CANSA, son of Ugra, a tyrant killed by Krishna.

CANTALA. HIND. *Agave vivipara* and *A. yuccæfolia*.

CANTHA-JATHI. BENG. *Barleria prionitis*.

CANTHARIDEÆ, a small tribe of vesicatory beetles, containing eleven genera, among which are *Cantharis*, *Mylabris*, and *Meloe*, species of all of which have been employed as vesicatories. The genus *Cantharis* does not occur in India, but

is largely imported. The genus *Mylabris* is very common in the Dekhan. *Cantharis erythrocephala* occurs in Shanghai and Chefoo.—*Royle*.

CANTHARIS VESICATORIA. *Latreille*.

Blistering beetle,	ENG.	Canterelle,	It.
Spanish flies,	"	Cantharis,	LAT.
Cantharides,	ENG., FR.	Hischpanskie muchi,	RUS.
Mouches d'Espagne,	FR.	Cantharidas,	SPAN.
Spanische Fliegen,	GER.		

A genus of Coleopterous insects, abundant in all the south of Europe, and spread into Germany. This insect was at one time largely imported into India, but since the year 1850, species of *Mylabris*, obtained in India, have been substituted.—*Royle*. See *Cantharideæ*.

CANTHIUM, a genus of plants of the natural order Cinchonaceæ. The species now recognised as of the E. Indies, are *C. angustifolium*, *Chinense*, *didymum*, *floribundum*, *longifolium*, *parviflorum*, *parvifolium*, and *recurvum*. Other species have been transferred to the genera *Randia*, *Stylocorine*, and *Webera*.

CANTHIUM DIDYMU. *Gertn.*

<i>C. cymosum</i> , <i>Pers.</i>	<i>Webera cymosa</i> , <i>Willd.</i>
<i>C. umbellatum</i> , <i>W. Ic.</i>	<i>Rondeletia cymosa</i> , <i>Poir.</i>
<i>Psydrax dicoccos</i> , <i>Gertn.</i>	<i>Cupea cymosa</i> , <i>D. C.</i>
Ursool,	MAHR.
Nalla balsu,	TAM., TEL.
Nalla Regu,	TEL.
	Tolan,
	URIYA.
	Poruwa,
	SINGH.

This is a small or middling sized, very handsome tree with deep green foliage. It is very abundant on most of the mountains in the Madras Presidency, particularly so on all the hills in the Salem district; grows in the Godavery forests, and is very common in Ceylon. A variety was considered by Wight as a distinct species from the *Didymum* of the eastern coast, but it only differs slightly in the inflorescence, and is not now considered specifically distinct; the wood is close-grained and hard, and mottled and very dark-coloured in the centre, like old seasoned oak.—*Beddome, Fl. Sylv.* p. 221.

CANTHIUM NITENS. *W. Ic.* *Malai caural*, *TAMIL*. Dr. Gibson seems to consider Dr. Wight's *C. nitens* identical with *C. didymum* (the *Canthium umbellatum*, *Wight*), and adds, that if right in this conjecture, the tree is a common one on the Bombay Ghats, and, from its flowers and shining leaves, well worthy a place in gardens. The wood is small, and is said not put to any use.—*Wight; Gibson*.

CANTON, a city and seaport of China, capital of Quang-tong, in the south-west of China, built on a river of same name. At an early date after the Hijira, the Arab Mahomedans established a factory at Canton, and their numbers were so great by the middle of the 8th century, that in 758 they attacked and pillaged and fired the city, and fled to their ships. In their commercial transactions with the Chinese, the natives of Europe were long restricted to this town. The city consists of three sections, divided by high walls; the streets are narrow, paved with small round stones in the middle, and flagged at the sides. Canton river has two tides in the 24 hours, greatly influenced by the moon's declination. At its entrance it is called Choo-keang. It is divided into two channels by the Wan-tong islands, the eastern one of which is the Hoo-mun or Hoo-tow-mun, or Tiger's Head entrance of the Chinese, the Bocca Tigris of Europeans, and Foo-mun of pilots. The channel to the west is called Bremer channel. Canton city is on the N. bank of the river, about

80 miles above the Bocca Tigris, 75 miles from Hong-Kong, and 70 miles from Macao. The wall is 6 or 7 miles in circumference. Canton was captured by the British, and ransomed 25th May 1841.—*Horsburgh*.

CANTOR, DR. THEODORE, a Bengal medical officer, author of valuable contributions, in the Bengal Asiatic Society's Journal, to the knowledge of the mollusca, the fishes, reptiles, and mammals of Southern and Eastern Asia; Notes respecting Indian Fishes, in *Lond. As. Trans.* v. p. 165; Notice of Skull of a Gigantic Batrachian, *Bl. As. Trans.* 1837, vi. p. 538; Catalogue of Malayan Reptiles, *ibid.* xvi. pp. 607, 897, 1026; Catalogue of Malayan Fishes, *ibid.* xviii. p. 963; On the Hamadryas genus of Hooded Snakes, *As. Res.*, *Lond. Zool. Trans.* 1838, p. 172; Spicilegium Serpentinum Indorum, *Lond. Zool. Trans.* 1839, pp. 31, 39; On Production of Isinglass from Indian Fishes, *ibid.* p. 115.—*Dr. Buist's Catalogue*.

CANVAS, sail-cloth, tent-cloth.

Zeildock,	DUT.	Canevazza,	IT., PORT.
Toile a voile,	FR.	Parussina,	RUS.
Segeltuch,	GER.	Parussnoe polotno,	TAM., TEL.
Lona,	IT., PORT., SP.	Kittan,	

Canvas woven from hemp is used in Europe as sailcloth for ships' sails, and a finer kind is made for towels and common tablecloths. Canvas is manufactured at Pondicherry and at Cuddalore, and sold in bolts, containing 40 yards, at from 20 to 25 rupees, and a coarser at 8 to 15 rupees a bolt. Canvas of excellent quality is manufactured in Travancore. European canvas, though much dearer, is generally preferred in India to the native material,—Europe material selling at 24, 25, and 26 rupees per bolt, while the ordinary country can be had for 16 rupees. A coarse description of very hard brown canvas has been for some time produced in Bengal. In some parts of the Madras Presidency, cotton canvas of very good quality is produced; two or more threads are placed together, sometimes the threads of the web are twisted either wet or dry. Native vessels have all their sails made of an inferior description obtained in the northern parts of Madras Presidency, at the rate of 6 to 8 rupees a maund of 25 lbs.—*Rohde, MSS.*

CANYA, in Hindu astronomy, the solar sign Virgo.

CANYA KUBJA, an ancient name of the town of Canouj.

CAOUTCHOUC, India rubber.

Sian-pi,	CHIN.	Gomma elastica, IT., PORT.
Quintul,	DA., SW.	Chirit mural,
Verderhars,	DUT.	Borracha,
Gom elastick,		Gomma elastica,
Gomme elastique,	FR.	Rexina, Ule,
Feder Harz; Kautschuk,	GER.	

India rubber, or caoutchouc, is a vegetable compound which is found in all plants with a milky juice, as in the moraceæ, euphorbiaceæ, artocarpacæ, apocynaceæ, cichoraceæ, papaveraceæ, campanulaceæ, and lobeliaceæ. India rubber has long been known to the natives of the East Indies and South America. It was not, however, till the expedition of the French academicians to S. America in 1735 that its properties and nature were made known in Europe, by a memoir upon it by M. de la Condamine. And subsequent notices of it were sent to the French Academy in 1751 by M. Fresnau, and in 1768 by

M. Macquer. It is used for machinery, in electric and surgical apparatus, weaving, and clothing.

Great Britain Imports.			British India Exports.		
	Cwts.	Value.		Cwts.	Value.
1830,	464	...	1874,	16,837	£117,775
1840,	6,640	...	1875,	19,893	108,618
1857,	22,000	...	1876,	15,258	97,861
1874,	129,163	£1,326,605	1877,	13,308	90,169
1878,	149,724	1,313,209	1878,	13,794	89,381
			1879,	10,033	61,685

The selling prices in London per lb. are—African, 1s. 5d.; Borneon, 1s. 9d.; S. and Central America, 2s.; and Madagascar, 2s. 3d.

The plants yielding the caoutchouc of commerce are—

Ficus elastica, Assam.	Hancornia speciosa of Pernambuco, in S. America.
Chavannesia esculenta, Burma.	Manihot glazionii, the Ceara tree of S. America.
Urecola, Borneo.	Hevea Benthamiana, Mull. of S. America; also
Vahea, Madagascar.	Brasilensis, discolor, Guyanensis, lutea,
Landolphia, Africa.	C. Markhamiana, Collins, pauciflora, rigidifolia,
Castilloa elastica, S. America.	Spruceana.

Caoutchouc is obtained in Borneo from three trees, — manongan, manongan putih, and manongan manga, from 50 to 100 feet high, and about 6 inches diameter,—seemingly three species of Willughbeia.

The American sources of the commercial supply are from the Hevea Braziliensis, H. Gwyanensis, Castilloa elastica and C. Markhamiana, and Hancornia speciosa. The African caoutchouc is got from the Vahea gumifera of Madagascar, and Landolphia Owariensis; and the Asiatic plants are Ficus elastica, Urecola elastica of Sumatra, Borneo, and Penang, Willughbeia edulis, and Chavannesia esculenta. Other plants are named, viz. Siphonia elastica, S. calinchu, Jatropha elastica, and Melodinus monogynus. The banyan tribe generally yields a milky juice, which, for many purposes to which caoutchouc is applied, might be rendered serviceable. So long ago as 1836, Dr. Royle reported fully on the Assam caoutchouc from the Ficus elastica. The Ficus elastica has been introduced into the Tenasserim Provinces, and appears to grow as well as an indigenous plant. Caoutchouc from Ficus elastica was brought to Arakan in 1878 by clans of the Shandoo or Pcor race, who receive it in barter from the Lushai. They reside north and south of the Blue Mountains. The plant is indigenous for thirty miles south of the Blue Mountains. In 1873 the Government of India formed plantations of it. It has aerial roots, and grows to a large size, above 100 feet, in the evergreen forests at the foot of the Assam hills.

Chavannesia esculenta, a troublesome creeper in the Burma forests, attains a girth of 11 inches, and its crown covers an area of 300 square feet. Its caoutchouc is similar in quality to that of the Ficus elastica.

Species of Ficus produce the caoutchouc brought from Java; and F. radula, F. elliptica, and F. prinoides are amongst those mentioned as affording a portion of that brought from America. Next to the Moraceæ, the order Euphorbiaceæ yields the largest quantity of caoutchouc.

Siphonia elastica, a plant found in Gayalla, Brazil, and extending over a large district of Central America, yields the best kinds of India rubber that are brought into the markets of Europe and America. The caoutchouc which is brought

from the islands of the Indian Archipelago is from the *Urceola elastica*, a climbing plant of very rapid growth and gigantic dimensions. A single plant is said to yield, by tapping, from 50 to 60 lbs. annually. It is also obtained from the juices of *Calophora utilis* and *Cameraria latifolia*, plants of South America and *Willughbeia edulis*, in the East Indies. Caoutchouc, whilst it is in the tissues of the plant, is evidently in a fluid condition; but after its separation from the other fluid parts, it forms a solid mass similar in its external characters to vegetable albumen. In this state it is dense and hard, but may be separated and rolled out so as to form a sheet resembling leather. Caoutchouc is employed to rub out pencil marks made on paper, and largely for waterproofing. When distilled, it yields oils which have a composition similar to oil of turpentine. In N.E. India, an India rubber tree grows to some 70 to 100 feet high. Immense forests of it are found on the west side of the Brahmaputra, extending along the Miri and Abor mountains. The rubber from this tree from some chemical property cannot bear the heat of a passage to Europe. It becomes a fluid during the voyage. Otherwise, in cold climates it is equal to other rubbers.

The Caoutchouc trees of the Bhamo and Mogooing districts are estimated at 400,000. They thrive most in damp moist soil, and in thick forests, shady and cool. They grow to from 75 to 150 feet high, and their roots grow over the ground to some distance. They are fit to tap when from 6 to 10 years old, at which time they are 21 to 30 feet high, and 4½ feet in girth.

In the Tenasserim Provinces, also, a species of *Echites*, an indigenous creeper, yields caoutchouc not at all inferior to that which is obtained from the elastic fig tree. The Agricultural and Horticultural Society, in reporting on a specimen sent them by Major MacFarquhar of Tavoy, observed: 'With care in preparing, it would be equal to the best South American.' Caoutchouc is also procurable from the *Nerium grandiflora*, a beautiful climbing shrub often met with in gardens. The *Loranthi* abound in Malabar; and a similar substance might readily be procured, as obtained from *Urceola elastica* in Penang and the Archipelago, *Ficus religiosa*, *F. Indica*, *Hippomane biglandulosa*, *Cecropia peltata*, and the *Jintawan* of Borneo.

Castilloa, the Ule of South America, belongs to the *Artocarpaceæ*, and is one of the loftiest of the forest trees of tropical America. There are two known species, *Castilloa elastica*, *Cerv.*, and *C. Markhamia*. Which yields the India rubber is at present (1876) disputed. The collectors are called Hulero. *C. Markhamia* attains to 180 feet in height, with a diameter of 5 feet, and a yield of 100 lbs. of India rubber; wood soft and spongy; leaves 14 inches long and 7 broad.

Hevea Brasiliensis (*Siphonia Brasiliana*, *Kth.*) grows in the valley of the Amazon. It is the *Castilloa* of South America. It is the most valuable of the India rubber trees, and furnishes the Para rubber. It was introduced into India in 1873, as it affords the best caoutchouc, exported from Para in Brazil. The juice is obtained by incisions cut through the bark; it falls freely from any wound. The stiffening milky juice is plastered over bottle-shaped clay moulds, the clay

being removed, when sufficiently coated, by washing. Other species of *hevea* yield juice abounding in caoutchouc of various qualities. It is dissolved by turpentine and spt. eth. sulphur. In Britain there are about twenty factories where this article is made into shoes, boots, capes, cushions, elastic bands.—*Poole's Statistics of Commerce*; *Rohde, MSS.*; *Royle, Productive Resources of India*, p. 76; *Mason's Tenasserim*; *Bonyng, America*, p. 258; *Reports, Exhibition of 1851*; *Eng. Cyc.*; *Trans. Royal As. Soc.*; *Tomlinson*, pp. 296-299; *Captain Strover, 1873*; *Markham, Peruv. Bark.*

CAPA. See *Eleusine coracana*.

CAPALA. HIND. *Rottlera tinctoria*. The oil, which is obtained plentifully from the kernels of this fruit after the removal of the celebrated kupli or kamala powder, promises to be of some importance medicinally as a cathartic oil, and deserves a more complete investigation. See *Dyes*.

CAPE ADEN, a high, rocky, peninsular promontory on the south coast of Arabia, 5 miles long and 3 broad. Its most elevated part, 1776 feet high, is called *Jabal Shamsham*, and in clear weather is visible 60 miles off. This peninsula was taken by the British in 1839, and has since been fortified. Several parts on and near it are named, as *Hejaf*, *Al-Ainah*, *Shaikh Ahmid Island*, *Ras ibn Jarbein*, *Ras Marbut* or *Steamer Point*, *Ras Tarsheir*, 988 feet; *Ras Marshigh*.—*Findlay*. See *Aden*.

CAPE BUNGO, in Japan, in lat. 33° 32' N., long. 132° 2' E., at which *Ferdinand Pinto* landed in 1542. See *Pinto*.

CAPE COMORIN, in lat. 8° 4' 26" N., and long. 77° 35' 35" E., is a low, sandy point, with a small white, square pagoda at its extremity. A little to the W. is a large village. Inland, the Cape rises in a gradual slope to the base of the ghats, the nearest of which, at 4 m. N.W., is an isolated, very sharp conical hill, 1403 feet high, often mistaken for the Cape itself. It is the most southerly point of the Peninsula of India. The name is from *Kumari*, a virgin, the virgin goddess *Durgah*, and has a legend that a virgin once leaped from it into the sea. It is covered on the eastern ridge with palmyra trees.—*Horsburgh*; *Imp. Gaz.* See *Comorin*.

CAPE DALGADO, on the E. coast of Africa, in lat. 10° 41' 12" S., and long. 40° 39' 51" E.

CAPE GUARDAFUI, a headland on the coast of Africa, nearly opposite Aden.

CAPE HEN, or *Sooty Petrel*, is the *Puffinus major*, also *Diomedea fuliginosa*.

CAPE JASHK is the N.E. limit of the Gulf of Oman.

CAPE LIANT, in the Gulf of Siam, in lat. 12° 34' N., long. 101° 11' E., called by the Siamese *Lem Samme San*. The whole of the coast, from Cape Liant to *Kamas* in Cambodia, is an uninterrupted archipelago of beautiful islands. One of them, *Hin Chalan*, is in lat. 12° 27½' N., and long. 100° 57½' E. See *Cambodia*.

CAPE MONZE, a cape in the southern part of Baluchistan, in lat. 25° N. It is the most westerly point in India. The mountains of Baluchistan are there only a few miles broad.

CAPE NEGRAIS, its extreme S. point in lat. 16° 1' 30" N., and long. 91° 13' 16" E., is the termination of the mountain range that runs N. and S. along the Arakan coast.

CAPE OF GOOD HOPE, the southernmost point in Africa. It was rounded by the Egyptians ages before the Portuguese succeeded under the command of Vasco da Gama. Cape Town, the capital of the territory of the Cape, stands on the west side of Table Bay, and rises in the midst of a desert, surrounded by black and dreary mountains, Table Mountain (3315 feet high), the Sugar Loaf, the Lion's Head, Charles Mount, and James Mount, or the Lion's Rump. From these several rivulets flow into Table Bay, False Bay, etc. This town surrendered to the British in 1795, and was restored in 1802 by the treaty of Amiens; it again surrendered to the British in 1806, and was finally ceded to them in 1814. Long. 18° 23' E., lat. 33° 50' S.

Cape Gooseberry, *Physalis Peruviana*, also Brazil cherry.

CAPE PALMYRAS, a projecting land in Orissa.

CAPE PETEL, also Cape Pigeon, the Daption Capense, *Stephen*, also called Pintado, and by sealers the Egli bird.

CAPE RAMAS, in lat. 74° E., and long. 15° 6' N., on the west coast of India, near Goa, has a small fort on it belonging to the Portuguese.

CAPERS.

Kebbir,	ARAB.	Capparis,	LAT.
Kappers,	DUT.	Kebbir,	PERS.
Capres,	FR.	Kaperszii,	RUS.
Kappern,	GER.	Alcapparraiss,	SP.
Cappari,	IT.		

The capers of commerce are the unexpanded buds of *Capparis rupestris* of Greece, *C. fontanesii* of Barbary, and *C. Ægyptiaca* of Egypt. Preserved in vinegar, these flower-buds constitute a well-known article of commerce and of luxury at our tables. The quality depends exclusively upon the age at which they are gathered, the smallest and youngest being the dearest and most delicate, and the largest and oldest the coarsest and cheapest. On an average, each plant of the caper bush gives a pound of buds. The consumption of capers in Britain is about 60,000 lbs. a year. Several other species of *Capparis* possess stimulating properties.

CAPER SPURGE, *Euphorbia lathyris*.

CAPILLAIRE, a syrup prepared with leaves of the *Adiantum capillus Veneris* and *A. caudatum*. The last grows in Ceylon, also amongst the Courtallum hills in the Indian Peninsula, in Cochin-China, and at Amboyna; the first is called by Rumphius, *Micca Miccan Uttan*.—*Ainslie's Mat. Med.* p. 297.

CAPOETA MACROLEPIDATA, a fresh-water fish of Tenasserim, Penang, and Java, with a large swimming bladder of which isinglass is made. See Isinglass.

CAPOOR KICHLEE. TAM. *Curcuma zedoaria*. Likewise the root of a plant called also Kakhur, sent to India and Persia for medicinal purposes, and for perfumery, and to preserve clothes from insects. It is about half an inch in diameter, and cut up when brought to market; it has a pungent bitterish taste, and slightly aromatic smell.—*Middle King.* ii. p. 400.

CAPPARIDACEÆ, the caper tribe of plants. Sixty-four species occur in the East Indies, of the genera *Gyandropsis*, *Cleome*, *Polanisia*, *Cratæva*, *Niebuhria*, and *Capparis*. Some American *Capparidaceæ* are very poisonous, others act as vesicatories, and a few are merely stimulant. To the

latter class belongs the *Capparis spinosa* of the south of Europe.

CAPPARIS APHYLLA. Roxb.

Karu,	HIND.	Doro (unripe fruit),	SIND.
Kirur,	SIND.	Pukko (ripe	"
Karil,	"	Pusco (flowers),	"

This small tree grows on the banks of the Jumna, in Tinnevely, Dekhan, Gujerat. On his journey to Kabul, the Honourable Mr. Elphinstone found it growing in the midst of the desert. All over the Panjab its flower-buds are cooked as a pot-herb; its unripe fruits are gathered, made to assume the acid fermentation, and made into a pickle with pepper, mustard, and oil, and eaten with bread. The fruit is about the size of a marble, and is gathered both green and ripe by great numbers of the natives, who eat it largely. Its wood is durable, and not eaten by insects. Karil fruit is considered by natives useful in boils, eruptions, swellings, piles, and in affections of the joints; also as an antidote to poisons.—*Roxb.; Voigt; Dr. J. L. Stewart; Powell's Handbook.*

CAPPARIS BREVISPINA. D. C.

C. acuminata, *Roxb.* ii. 566.

Kalo-keru,	BENG.	Palikee,	TEL.
Authoondy kai,	TAM.		

A scrambling shrub of Malabar and Bengal, common in hedges, with a beautiful red fruit, the size of a small pear; the stem armed with yellow thorns in pairs at the leaves. The green fruit is used in making pickles.—*Jaffrey; Voigt; Roxb.*

CAPPARIS DECAISNÆI. Its buds, *Paneero*, SINDI, are pickled, and would well replace the ordinary capers of commerce; leaves epipastic.

CAPPARIS DECIDUA. Its fruit, *Karil*, called also *Déle*, is gathered from the tree when it is of a bright red colour, and about the size of a cherry; it is used as a pickle.—*Powell's Handbook.*

CAPPARIS DIVARICATA. Lam., W. and A.

Pachoonda,	MAHR.	Budareni,	TEL.
Toaratti maram,	TAM.		

A small tree of Coimbatore, and not uncommon on the more arid wastes and in the dry hedges of the interior of the Bombay Presidency. Wood only fit for fuel.—*Wight; Gibson.*

CAPPARIS GRANDIS. Linn., W. and A.

<i>C. maxima</i> , <i>Heyne.</i>		<i>C. brevispina?</i> <i>Gibson.</i>	
<i>C. bisperma</i> , <i>Roxb.</i>			
Waghutty,	MALAY.	Guli,	TEL.
Vellai toaratti maram,		Gullem chettu,	"
	TAM.	Regutti,	"

A small tree of Coimbatore, and common in waste places inland of the Bombay Presidency; wood close-grained, hard, and good; too small for general use, but good for turning.—*Wight; Gibson; Elliot, Flor. Andh.; Usef. Pl.*

CAPPARIS HEYNEANA. *Wall.* *Chayruka*, HIND. A shrub growing in S.W. India, at Cochin and Courtallum. Its leaves are used for rheumatic pains in the joints, and its flowers as a laxative drink.—*Voigt, 74.*

CAPPARIS HORRIDA. Linn., W. and A. Ic.

C. Zeylanica, *Roxb.* ii. 567.

Thorny caper bush, ENG.	Katallikai,	TAM.
Ardanda,	HIND.	Atanday,
Hunkara,	SANSK.	Adonda; Arudonda, TEL.

Grows in the Panjab, Bengal, and the Peninsula of India. The natives eat its fruit dressed in different ways, but chiefly as a pickle.—*Drs. Ainslie, p. 238, Stewart, Roxb.*

CAPPARIS OBOVATA is found in the Sutlej valley between Rampur and Sungnam, at an elevation of 3000 to 5000 feet. Its fruit is pickled.—*Cleghorn, Panjab Report*, p. 68.

CAPPARIS PANDURATA. *Linn.*

O. Zeylanica, Linn. | *Than-yeet, . . . BURM.*

CAPPARIS SEPIARIA. *Rozb. ii. 568.*

Kantagur; Kamai, BENG. | Nalla uppi, . . . TEL.
Grows in Bengal and Peninsula, and is a good hedge plant.—*Voigt, pp. 74, 75.*

CAPPARIS SINAICA. The buds of the caper of Mount Sinai are the Filfil-ul-jabl, or mountain pepper of the East.—*O'Shaughnessy.*

CAPPARIS SPINOSA. *L.*

<i>Barari; Ber, . . . CHEN.</i>	<i>Kakri; Bassor, . . . SUTLEJ.</i>
<i>Kabra, . . . HIND. OF LAD.</i>	<i>Kaur; Kiari, . . . "</i>
<i>Bandar, . . . SUTLEJ.</i>	<i>Taker, . . . "</i>
<i>Bauri, . . . "</i>	<i>Kabarra, . . . TR. IND.</i>

In Europe this plant furnishes the caper. It generally grows in the Panjab, exactly as a recent traveller has described it on Sinai, viz. 'in bright green tufts hanging down from the clefts of the rocks,' and adorned with very handsome large flowers. It is found near Multan, in the Salt Range, along the Trans-Indus hills to Peshawur, and in the valleys of some of the great rivers, ascending to 5000 feet at Wangtri, on the Sutlej 8000 feet, *Thomson*, and on the Indus above Iskardo to about 10,500 feet (*Jacquemont* and *Thomson*), and it occurs to 12,000 near Leh. The ripe fruit is made into pickles by the natives of the Salt Range, etc., but in some places at least eaten only by Hindus. Mr. Edgeworth prepared the buds in the European style as capers, and found them excellent. In Ladakh the leaves are used as greens; they are eaten by goats and sheep; and in Kangra the roots are eaten to be applied to sores.—*Dr. J. L. Stewart*, p. 616.

CAPPER, COLONEL, Quartermaster-General of the Madras army in the latter part of the 18th and beginning of the 19th century, and his house on the sea-beach is still known by his name. He was the first to put forward the view that the storms of the Indian Ocean are rotatory, and in 1801 he published a book on the Winds and Monsoons, adopting the view that hurricanes are whirlwinds. He took an active part in the troubles of the Madras army, and was embarked for England, but the ship never reached.

CAPRA ÆGAGRUS. *Gmelin, Blyth, Hutton.*

<i>Antelope gazella, Gmel.</i>	<i>C. hircus, . . . Gray.</i>
<i>Ægoceros ægagrus, Pallas,</i>	<i>Hircus gazella, "</i>
<i>Wagner.</i>	<i>Capra Blythi, Hume.</i>
<i>Capra Caucasica, Gray.</i>	
<i>Persian wild goat, . . . ENG.</i>	<i>Borz, . . . PUSHTU.</i>
<i>Pa-sang (male), . . . PERS. ?</i>	<i>Ter (male), Sera, . . . SIND.</i>
<i>Box (female), . . . "</i>	<i>Phashin, . . . BALUCH.</i>

This has five varieties, viz. :—

Var. a. *Capra ægagrus, Buch.*, lives in the highest Khassya mountains, where they are reared by the people. It has no wool, and is used for food.

Var. b. *Capra ægagrus* of Changra, *Buch.*

<i>C. ægagrus lanigera, Desm.</i>	<i>C. hircus, var., Desm.</i>
<i>Shawl goat, . . . ENG.</i>	<i>Cholay, . . . NEPAL.</i>
<i>Bouc de Cachemire, Fr.</i>	<i>Camjoo, . . . TIBET.</i>
<i>Changra, . . . HIND.</i>	

This is domesticated in Tibet, and the wool is exported to Kashmir, where it is made into the finest shawls. It has on the body a long coarse hair, intermixed with which is a fine soft wool, which is the article used in the manufacture.

Var. c. *Capra imberbes*, the Berbura, *Buch.* The Berbura goat is found to the west of the Jumna. Its female is the Berburi, and the Bengali call it Ram Sagul. The body is very like the long-legged goat of the south of India; in manners they are similar. The scrotum of the male externally is separated into two distinct bags.

Var. d. Tibetan goat of Ladakh; has a short tail, and very short ears, scarcely two inches long, and concealed; has long, soft, pendulous hair, but no wool.

Var. e. Tibetan goat of Ladakh; has long, soft, pendulous hair, but no wool.

C. ægagrus, of the mountains of Asia, is believed to be the parent stock of all the goats, mingled perhaps with the *C. Falconeri* of India. The breeds greatly differ from each other, but they are fertile when crossed.—*Darwin.*

CAPRA MEGACEROS. *Hutton, Blyth, Jerdon.*

<i>Ægoceros Falconeri, Huget,</i>	<i>H. megaceros, Adams.</i>
<i>Wagner, Schreiber.</i>	<i>Capra megaceros, Blyth,</i>
<i>Hircus Falconeri, Gray.</i>	<i>Hutton.</i>
<i>Capra Falconeri, Huget,</i>	<i>C. Caucasica, Jerdon.</i>
<i>Wagner.</i>	<i>C. Blythii, Hume.</i>
<i>Hircus ægagrus, var., Gray.</i>	<i>C. Jerdoni, "</i>
<i>Sind wild goat, Ibex, ENG.</i>	<i>Rapho-chhe, Ra-chhe,</i>
<i>Rass of Wood, . . . "</i>	<i>Rawa-che.</i>

The *Mar-khor* inhabits the highest parts of the Tibetan Himalaya, also the Suliman range, the Pir Panjal, Kashmir, the Hazara Hills, the hills of the Jhelum and Chenab, and Ladakh.

The Kashmir variety (*Capra Falconeri*) has openly spiral horns. The horns of the Suliman variety more nearly approach a straight line. The Sind goat or Sind ibex is identical with the wild goat of the Caucasus, Armenia, and Persia, probably of Crete. It is not found east of the Indus. The famed bezoar (pa-zahr, PERS., fa-zahr, PERS.) of commerce is obtained from this goat. It associates in small herds frequenting steep and rocky hills, in winter descending to the bare spots in the wooded region. It is much sought after by sportsmen, and the horns are considered a great trophy.—*Jerdon*, p. 291.

CAPRA SIBIRICA. *Meyer, Blyth.*

<i>C. sakeen, Blyth.</i>	<i>C. Himalayana, Blyth.</i>
<i>C. Pallasi, Schinz.</i>	
<i>Himalayan ibex, . . . ENG.</i>	<i>Kyl of . . . KASHMIR.</i>
<i>Skin (male), Iskin, HIM.</i>	<i>Tangrol of . . . KULU.</i>
<i>L'-dtau (female), . . . HIND.</i>	<i>Buz of . . . SUTLEJ.</i>

Is found throughout the Himalaya from Kashmir to Nepal; rare in Kashmir. The soft under fleece is called asli-tus, and is used for lining shawls, stockings, gloves, and is woven into a fine fabric called Tusi. No wool is so rich, so soft, and so full. The hair itself is manufactured into coarse blanketing for tents, and twisted into ropes.—*Jerdon*, 292.

CAPRELLA, the phantom shrimp, is found on seaweed sitting upright like a monkey, holding on by its hind claws, and, with ghastly grimaces, mesmerizing all passers-by with its fore-claws. It sits in like guise upon sponges a mile or two deep in the darkness,—there, however, not a quarter of an inch, but three inches long.

CAPRIFOLIUM CHINENSE. *Smith.* *Kin-yin-hwa*, of the Chinese; a climbing plant with gold and silver flowers; one of the *Caprifoliaceæ*.

CAPRIFOLIUM SEMPERVIRENS. *R. et S.* *Lonicera sempervirens, D.C.* | Trumpet honeysuckle.

The honeysuckle occasionally seen in India.

CAPRIMULGIDÆ, the goatsucker family of birds, belonging to the tribe Insesores.—Caprimulgus affinis of Java, C. albonotatus, C. Asiaticus of India, C. atripennis, C. Indicus of Kamaon, Malacca, C. Kelaarti, C. macrouris of Java, C. Mahrattensis of the Dekhan, C. monticolus of do., C. ruficollis, C. Europæus; migratory night-jar of Europe, N. Africa, W. Asia, Siberia, and Kamtschatka.

CAPRINÆ, a sub-family of mammals of the family Bovidæ, comprising goats and sheep, 1st capricorns, or antelope goat or mountain antelope; 2d, the true goats. See Antilopinae, Bovidæ.

CAPROVIS ARGALI.

Agocerus argali, Pallas. | *O. argali*, Pallas.
Ovis ammonoides, Linn. | *O. Hodgsoni*, Blyth.
O. ammonoides, Hodg.

Hyan, nyan, nyund, nuan, niar, gnaw, . . . Tib.

Dr. Gray says this species, the Nyan or Bambera, or wild sheep, seldom or never crosses the Hinachal, the Indian side of which range is the special habitat of the Nuhor, while to the north and west beyond Tibet, C. argali is replaced by other species; so that Tibet may be considered as the special habitat of one species (*Ovis ammonoides*), and the plateaux north of Tibet as far as the Altai of another (*Ovis ammon*), cited as types of the true ovine form; and it may be added, that the six sorts of tame sheep of Tibet and the Sub-Himalayas, all without exception exhibit the essential characters of that form. There are several species that may be confounded under this head. The Siberian Argali is found in the most northern part of that country, and it is probably different from the Himalayan animal; but Mr. Blyth had not been able to discover any difference between the specimen received from Mr. Hodgson and those which were sent from Siberia by the Russian naturalist.

CAPROVIS VIGNEI, the Houriar, extends along the eastern spurs of the Salt mountains, but becomes less common as we proceed eastward, and is seldom met with on the ranges beyond the town of Jhelum, or southwards of the Beas river. It is confined to the north and western portions of the Panjab, including the Suliman chain, where it is known by the name of Kuch. It is also a denizen of the mountains around Peshawur, including the Khaibar pass, Hindu Koh, and Kafiristan. The Shapoo or Shalmar of Ladakh, if not identical, is certainly very closely allied; its differences are slight, and such as might result in a great measure from the marked diversity of climate, food, etc., of the two regions. This species is no doubt the Sha of Tibet described by Vigne; and possibly the wild sheep of western Afghanistan, Persia, the Caucasus, Armenian and Corsican mountains, is the same species altered mayhap by climate and other external agencies. The eastern limits of the Shapoo have not been fixed with certainty; but it would seem that, commencing at Ladakh, it proceeds westward towards the Indus into the regions where the Houriar is found; and probably when these regions are explored, we shall find out the relation between what has been supposed distinct, but which Dr. Adams is inclined to consider one and the same animal.—Adams.

CAPSELLA BURSA PASTORIS. Manch.

Mullay muntha keeray, Tm. | Shepherd's purse, . Eng.

Common on the Neilgherries; also grows in

Europe, Persia, Asia, and Japan; used by the natives as a pot-herb.—Jaffrey; Wight.

CAPSICUM, red pepper, chillies.

Filfil,	ARAB.	Chabu,	MALAY.
Nga youk thi,	BURM.	Lada mera,	"
Ta-hu-tsiau,	CHIN.	Lada china,	"
Lah-tsiau,	"	Chabe sabrang, . . .	"
Lall mirich,	DUKH.	Filfil i Shiah, . . .	PERSS.
Mirchie,	GUJ.	Mallaghai,	TAM.
Chabai, Chabe, . . .	MALAY.	Mirapa-kai,	TEL.

The shell of the fruit is fleshy and coloured, and contains a pungent principle, which also exists in its seed in great activity. On this account both the fruit and seeds of different varieties or species of Capsicum are in request as a condiment; and either in the unprepared state, or ground, when they are called cayenne pepper, form a conspicuous feature amongst the plants affording stimulating substances used by man. In Europe the Capsicum enters largely into the seasoning of food and the preparation of pickles, and in warmer countries it constitutes one of the first necessities of life, either green or ripe. It is the species of this genus, and not any of the genus Piper, which is the peppery condiment of all the inhabitants of India and the Asiatic islands in Eastern Asia; the latter, indeed, being little used, and mostly raised for exportation. Foreign species or varieties of Capsicum have been introduced into the Archipelago, and are named by the Malays, Chabe China, the Capsicum of China; and Chabe Sabrang, the Capsicum of India, literally, of 'the other side of the water.' There are now numerous varieties of chillies in India, many of which have been introduced. They are raised from seeds that have been kept for one year, for if fresher, the crop is generally a failure. One species, called 'devil's pepper,' introduced by Lord Harris from Trinidad, is so intensely hot that the natives can hardly manage to use it. It is cultivated during the cold months. In the Tenasserim Provinces two or three species enter into all the native dishes, not in the form of pepper, but the fruit, stewed or roasted, is eaten with the food. In India, the dried fruits of several species and varieties of Capsicum usually seen are the C. annum (common Capsicum), C. frutescens (goat pepper), C. grossum (bell pepper), C. minimum (bird's eye pepper), perhaps only cultivated varieties of one species. They are valued as a digestive condiment, and are raised all over the S.E. of Asia as condiments, and to make cayenne pepper and chilli vinegar.—Tomlinson; Crawford, Dict. p. 82; Jaffrey; Mason.

CAPSICUM ANNUM. Linn. Common chilli.

Gach mirich,	BENG.	Kapu molagu, . .	MALEAL.
Spanish pepper, . .	"	Matitsawrang, . .	PANJ.
Common capsicum, .	"	Mollagu; Mollaghai,	TAM.
Red pepper,	"	Mirapa-kai, . . .	TEL.

Is largely cultivated in South America, Mexico, and India. C. baccatum, Linn., bird's eye pepper, var. of C. annum, Linn.—Rozb. i. 573. See Chillies.

CAPSICUM FASTIGIATUM, var. of C. annum, called red pepper, Guinea pepper, cayenne pepper, common capsicum, chilli pepper, Usari mollaghai, TAM., a small conical orange-coloured pod, shining externally, internally containing spongy pulp, and white flat reniform seeds in two cells. It contains a volatile neutral principle called capsaicine, and acts as an acrid stimulant, and externally a rubefacient. It is used in putrid

sore throat, scarlatina; also in ordinary sore throat, hoarseness, and dyspepsia, and yellow fever, and in diarrhoea occasionally, also in piles.—*Powell's Handbook*, i. p. 363.

CAPSICUM FRUTESCENS. *Linn.* Var. of *C. annuum*, *Linn.*

Lal Lamba mirch, . . .	BENG.	Chabai, . . .	MALAY.
Nepal chilli, . . .	ENG.	Chabe Lombok, . . .	"
Golconda chilli, . . .	"	Lada mera, . . .	"
Goat pepper, . . .	"	" china, . . .	"
Chilli, . . .	"	Brahu maricha, . . .	SANSK.
Bird pepper, . . .	"	Mallaghai, . . .	TAM.
Cayenne pepper, . . .	"	Mirapa-kai, . . .	TEL.
Lall mirch, . . .	HIND.	Golakonda, . . .	"
Lanka mirch, . . .	"	Mirapa (yellow variety), . . .	"
Lalgach march, . . .	"	Sima mirapa, . . .	"

This, the large red capsicum, is grown all over India by sowing the seed broadcast, and when the plants are about 6 inches high, putting them either in rows or beds 18 inches apart. The soil should be rich. They require watering, and to be kept clear of weeds; a yellow variety is *C. flavum*.—*Roxb. i. 574*; *O'Shaughnessy*, p. 468.

CAPSICUM GROSSUM. *Willd.* Bell pepper. Kafferi mirich, *HIND.* A var. of *C. annuum*.

CAPSICUM MINIMUM.

Gna yoke, . . .	BURM.	Bird's eye pepper, . . .	ENG.
Gna yoke mo-hmyau, . . .	"	Oosi-mulaghai, . . .	TAM.
E. Indian bird pepper, <i>ENG.</i>	"	Sudi mirapa kaia, . . .	TEL.

This plant yields its fruit for a series of years. Its fruit is very hot.

CAPSICUM NEPALENSIS. Var. of *C. annuum*, *Linn.*

Gach march, . . .	BENG.	Mallaghai, . . .	TAM.
Capoo Moolagoo, <i>MALEAL.</i>	"	Mirapa-kai, . . .	TEL.
Ratamiris, . . .	SINGH.	"	"

This is the most acrid and pungent of the species *Capsicum*.

CAPSICUM PURPUREUM and *C. minimum* are cultivated in small quantity in Pegu for domestic use.—*McClelland*.

CAR, the rath of India, used at the Hindu temples to convey the idol from one place to another. This is usually preceded by native music, flaring torches, dancing girls, and priests, the deity bedizened with jewels, and carried on a richly-constructed throne, and fanned with gorgeously-constructed fans. While Sir G. Campbell was Lieutenant-Governor of Bengal, twenty people fell while the car at Goopto was being dragged; eight were run over, five were killed on the spot, and three were wounded, of whom one died. The six victims were women.

CARABIDÆ. *Leach.* The family of ground beetles, about 9000 species are known. Almost all possess a very pungent, disagreeable smell; and a few, called bombardier beetles, have the peculiar faculty of emitting a jet of very volatile liquid, which appears like a puff of smoke, and is accompanied by a distinct crepitating explosion. They are mostly nocturnal and predacious. They are chiefly remarkable for brilliant metallic tints or dull red patches, when they are not wholly black, and are therefore very conspicuous by day, but insect-eaters are kept off by their bad odour and taste. They are sufficiently invisible at night, when it is of importance that their prey should not become aware of their proximity. Many species of *Carabus*, a genus of the family *Carabidæ*, occur in India. *C. celestis* is a beautiful beetle of China. *C. impressus*, *Fabr.*, and *C. politus*, *Fabr.*, occur in the East Indies.

CARAB TREE, *Ceratonia siliqua*, *W.*

CARACAL, *Felis caracal*, *Schreber*, the Indian lynx, occurs in Africa and Asia. It has immense speed, runs into a hare as a dog into a rat. It often catches crows as they rise from the ground, by springing 5 or 6 feet into the air after them.

CARAGANA FLAVA. *Smith.* Hwang-ting of the Chinese. In China its root is eaten as food in times of scarcity. It is obtained from the provinces of Ngan-hwui, Che-kiang, and Hunan.

CARAGANA GERARDIANA is the Tartarian furze. *C. arborescens* is the tea tree of Siberia.

CARAGANA VERSICOLOR. *Royle.*

Caregana pigmae, *D.C.* | *Dama*, *TIB.*

A small shrub which grows in Tibet and Western Himalaya at elevations of 14,800 feet, and is very useful for fuel.—*Drs. Stewart and Thomson*.

CARALLIA CALYCINA. *Benth.* This large Ceylon tree has two varieties,—var. α , Singhe Raja forests, between Galle and Ratnapura, at no great elevation; var. β , Central Province, at an elevation of 4000 to 5000 feet.—*Thw. ii. p. 121*.

CARALLIA INTEGERIMA. *D. C.*

<i>C. Ceylanica</i> , <i>Arnt., W., Ill.</i>	<i>C. Timorensis</i> , <i>Bl.</i>
<i>C. corymbosa</i> , . . .	<i>C. octopetala</i> , <i>F. v. Mueller.</i>
<i>C. Sinensis</i> , . . .	<i>Pootia coreopsifolia</i> , <i>Mig.</i>
<i>Kierpa</i> , <i>BENG.</i>	<i>Punschi</i> , <i>MAHR.</i>
<i>Punselu</i> , <i>Andi Punar, CAN.</i>	<i>Dawata</i> , <i>SINGH.</i>

A very common tree in the Western Ghat forests, up to 4000 feet, from Bombay down to Cape Comorin, also on the Cuddapah hills; most abundant in S. Canara. In Ceylon it is met with up to 3000 feet, and it is indigenous in Bengal, Burma, Hong Kong, and tropical Australia. It is a highly ornamental tree, on account of its beautiful foliage. The timber is ornamental and of a reddish colour, and is used for furniture, cabinet purposes, and fittings. It is tough and not easily worked, brittle and not durable, and has a pretty wavy appearance, and is peculiar in structure, having a great deal of cellular tissue. A cubic foot unseasoned weighs about 56·60 lbs., and 44 lbs. when seasoned, and its specific gravity is ·684; in Burma, where the tree is known by the name of Maneioga, it is used for planks and rice pounders. In Calcutta it is in use for house-building.—*Beddome, Fl. Sylv.*

CARALLIA LANCEÆFOLIA. *Roxb.* A tree of Sumatra.—*Voigt*.

CARALLIA LUCIDA. *Roxb.*

<i>Carallia integrerrima</i> , <i>D.C.</i>	<i>Carallia integrifolia</i> , <i>Grah.</i>
<i>Kierp</i> , <i>Kierpa</i> , . . . <i>BENG.</i>	<i>Dewata gaus</i> , . . . <i>SINGH.</i>
<i>Maneioga</i> , <i>BURM.</i>	<i>Davotte</i> , "
<i>Phansi</i> , <i>CAN.</i>	"

This handsome tree grows on the Malabar side of India, in the Konkans, the Circars, Kannaon, Sylhet, Chittagong, Pegu, Mergui, and in Ceylon up to 3000 feet. On the Bombay side it is small, but pretty frequent in the forests of the S. Konkan. Wood hard, close-grained, and might be used in turning. *Thwaites* says it is rather ornamental, and adapted for furniture. It is a large and common tree north of Rangoon and throughout Pegu. Wood of a peculiar structure, thick medullary rays going through from the centre to the circumference; colour red; used for planks and rice pounders, and may possibly be found useful for cigar boxes. In the southern forests of Pegu it is a plentiful tree of large girth, and in Calcutta is employed in house-building, under the name of *Kierpa*.—*Drs. Gibson, McClelland, Brandis, and Voigt*.

CARALLUMA ADSCENDENS. *R. Br.*

Stapelia adscendens, *Roxb.* | *Cullea moolayan*, . . . *TAM.*

This curious-looking fleshy plant, with angular stems, belonging to the natural order Asclepiaceæ, is used by the natives in making pickles, and sometimes in chatni.—*Jaffrey*. See Vegetables.

CARAMBOLA TREE, *Averrhoa carambola*. Largely cultivated in the Kwang-tung province of China.

CARAMBU. *TAM.* *Caryophyllus aromaticus*.

CARAMBU. *MALEAL.* *Ludwigia parviflora*.

CARANA PALM, the *Mauritia carana*. Its leaves are used as a thatch for houses.—*Seem*.

CARANX ROTTLEI. Rudder fish; an inhabitant of the southern seas, from 1 to 2 feet long. *C. mate*, *C. and V.*, horse mackerel. See Fishes.

CARAPA, *sp.* *Taila-oon*, *BURM.* A Tavoy wood used in building.—*Col. Firth*.

CARAPA GUIANENSIS. Its seeds yield a solid oil or vegetable milk. It is a large tree of Guiana. See Dyes.

CARAPA MOLUCCENSIS. *Lam.*

Xylocarpus granatum, *Roxb.*, *Willde.*

Kadul, . . . *SINGH.* | *Kandalangha*, . . . *TAM.*

This tree is a native of the coast in Malabar, Ceylon, and in the Sunderbuns; is also found in Africa, Australia, Madagascar, and the Malay Archipelago.—*Beddome*, *Fl. Sylv.* p. 136.

CARAT, from the Greek *keration*, a kind of vetch. A carat weighs 4 grains French, or 3½ grs. troy. It is used in weighing precious gems, and also in valuing the alloyed precious metals, in this case standing for an imaginary 24th part of the pound troy, the number of carats indicating the pure metal, and the remainder the alloy. Thus the carat standard of the sovereign is 22, or 2 parts alloy; of watch-cases with the Goldsmiths' Hall mark, 18, or 6 alloy. In France the latter is the lowest legal standard.—*King*.

CARAVAN. See *Kafilah*; *Karwan*.

CARAVANSARY. These, in Syria, form four sides of a large quadrangular court. The ground floor is used for warehouses, the first floor for guests, and the open court for the loading and unloading of their burdens, and the transaction of mercantile business generally. The apartments used for the guests are small cells opening into a corridor, which runs round the four sides of the court.—*Eothen*, p. 243. See *Dharmasala*; *Serai*.

CARAWAY PILLAY. *TAM.* *Bergera Konigii*.

CARAWAY SEED.

Carvi; *Cumin des pres*, *FR.* | *Carvi*, *It.*
Brodkummel, . . . *GER.* | *Carum Carui*, . . . *LAT.*
Keummel, | *Alcaraves*, *SP.*

These aromatic seeds are used to flavour cheese, spirits, liqueurs, and articles of medicine.—*O'Sh.*

CARBI or *Karbi*. *BENG.* Stalks of *Sorghum vulgare*, used as fodder.

CARBON, when pure, is diamond; less pure, is plumbago, coal, and charcoal.

CARBONATE OF LEAD, white lead, ceruse.

CARBONATE OF LIME.

Kwang-feu, . . . *CHIN.* | *Carbonate de chaux*, *FR.*
Chalk, *ENG.* | *Carbonas calcis*, . . . *LAT.*

A very abundant mineral, and embraces several varieties, of which stalactical carbonate of lime is one. All the limestone caves of Tenasserim have stalactites hanging from their roofs, and stalagmites rising on their floors. The Siamese Karens often bring over bits of limestone of the shape of

a shell, and, when broken, a shell usually of the genus *Melania* appears, that has been encrusted with carbonate of lime. Much of the alabaster of which ornaments are made in Burma, is stalagmite; but all the alabaster images of that coast are made of marble, and not of compact gypsum, which they much resemble.—*Mason*.

CARBONATE OF SODA. Impure carbonate of soda, called *Sajji* or *Sajji matti*, occurs as an efflorescence in some part or other of almost every district in India. Muriate of soda and carbonate of lime exist in the soil, and the natron is found on the surface of the moist earth or mud. Near Gundycottah, on the banks of the Pennar, common salt is interstratified with the upper schistose strata of the argillaceous limestone on which the sandstone rests; and on the surface of the neighbouring soil, natron, contaminated with much muriate of soda, is collected.

Barilla, an impure carbonate of soda, is prepared by burning plants of the *Salsola* and other species, and collecting the ashes, which melt into a coloured mass. *Sajji lota* is a somewhat purer kind, but still contains an immense amount of organic and other foreign matter, such as the sulphates of soda and lime, chloride of sodium and potassium, sulphide of sodium, sulpho-cyanide and ferrocyanide of sodium, together with silica and clay. The *Kangan khar* plant yields the best alkali. The pure *sajji* from this plant is called *lota sajji*, and the residue mixed with ashes is called *Kangan khar sajji*. The other two plants yield only a dirty and inferior substance known as *Bhutni sajji*, 'devil's soda.' This is black in colour, and sold in pieces like lumps of ashes. The plant burned in the Panjab is termed *Khar*, or in Persian *Ashkhar*; its scientific name is *Caroxylon Griffithii*. There are many square miles densely covered with this last, whereas the *Khar* is comparatively rare. *Khar* is applied to various herbs belonging to the natural order *Chenopodiaceæ*, particularly the *Anabasis multiflora* and the *Caroxylon Griffithii*. The ashes, which fuse, run into a pot placed beneath the burning heap.—*Powell*; *Stewart*.

CARBUNCLE.

Escarboucle, . . . *FR.* | *Carbunculus*, . . . *LAT.*
Karfunkel, . . . *GER.* | *Merah*; *Dalima*, *MALAY.*
Anthrax, . . . *GR.* | *Mastiga*,
Bareketh, . . . *HEB.* | *Carbunculo*, . . . *SP.*
Carbunchio; *Carbunchis*, *IT.* | *Manikiam*, . . . *TAM., TEL.*

One of the inferior gems; that variety of the garnet called *almandine*. Common in Southern India. Carbuncles, from the most ancient times of the Romans, have been set with a backing to enhance their colour. The carbuncles of superior brilliancy are called *males*, and those of inferior colour, *females*. Under this term the ancients included all gems of a red colour, such as hyacinths, rubies, garnets. The carbuncle, in Hebrew, *Bareketh*, signifying flashing stone, or lightning stone, was supposed to fall from the clouds, amid flashes of lightning.

CARCATA, also *Carcataca*. *SANSK.* The solar sign Cancer. See *Varsha*.

CARCHARIAS, a genus of heterocercal fishes, belonging to the *Squalidæ* or shark family. *C. leucas*, *Valen.*, is found in the southern seas. It is about 12 feet long. *Carcharodon Rondeletii* of Australia, a large shark; one of them measured 86½ feet.

CARCHEMISH, the capital of the Hittites, is the modern Kala Jerablus, on the west bank of the Euphrates, 20 miles below Beredjik.

CARDAMOM HILLS, a range of hills in Travancore, rising 2000 to 4000 feet high, and lying between lat. $9^{\circ} 27'$ and $10^{\circ} 4' N.$, and long. $76^{\circ} 52'$ and $77^{\circ} 17' E.$ They are unhealthy and sparsely occupied. The cardamoms grow best at about 3000 feet; and annually about 10 tons, value £30,000, are collected.

CARDAMOMS.

Hilbuya,	ARAB.	Puwar,	MALAY.
Ebil,	"	Capulaga,	"
Yalakki,	CAN.	Kakelah-seghar, . .	PERS.
Taou-kau,	CHIN.	Heil,	"
Yang-chun-sha, . .	"	Ensal,	SINGH.
Ellachi,	HIND.	Yellam arisi, . . .	TAM.
Cardamomi,	IT.	Yeylakulu,	TEL.
Kapol,	JAV.		

The cardamoms of the shops are the produce of several genera of plants,—*Alpinia*, *Amomum*, *Elettaria*, and *Renealmia*. The round seeds of *Amomum* cardamomum of the Burma forests, Sumatra, and Malacca, are used by the Malay in lieu of the true cardamom. *A. angustifolium* of Madagascar supplies some of the cardamoms; *A. maximum* of the Malay Islands, Nepal, and Ceylon, also produces a cardamom of an inferior character. *Alpinia* cardamomum of the western coast of India in the Travancore forests, produces a cardamom in great request. *Amomum grana paradiisi* of Madagascar and Ceylon yields an inferior sort. *Elettaria* cardamomum of the hilly parts of Mysore, Coorg, Malabar and Travancore, and Canara, yields the true cardamom, and is both cultivated and wild. In the Travancore forests they are found at elevations of three to five thousand feet. The mode of obtaining them is to clear the forest of trees, when the plants spontaneously grow up in the cleared ground. The average number of candies is about 140 to 300 candies; value, 1000 to 2000 rupees the candy of 600 lbs. Cardamoms are much esteemed as a condiment, and great quantities are annually shipped to Europe from Malabar and Travancore. In commerce there are three varieties, known as the short, short-longs, and the long-longs. Of these the short are more coarsely ribbed, of a brown colour, and are called the Malabar cardamoms or Wynad cardamoms. They are reckoned the best of the three. The long-longs are more finely ribbed, are of a paler colour, and the seeds are white and shrivelled. The short-longs merely differ from the latter in being shorter or less pointed. It is usual to mix the several kinds together, when ready for exportation. Some care is required in the process of drying the seeds, as rain causes the seed-vessels to split, and otherwise injures them; and if kept too long in the sun, their flavour becomes deteriorated. They are chiefly procured from the high lands overlooking the Dindigul, Madura, and Tinnevely districts. In these mountains the cultivators make separate gardens for them, as they thrive better if a little care and attention be bestowed upon them. Cardamoms are a monopoly in the Travancore State, and cultivators come chiefly from the British provinces, obtaining about 200 to 240 rupees for every candy delivered over to the Government. In the forests on the western slopes of the Coorg mountains, cardamom cultivation is carried on to a great extent. In

February, parties from Coorg start for these western mountains, and, selecting a slope facing west or north, mark one of the largest trees on the steepest declivity. A space about 300 feet long and 40 feet broad is then cleared of brushwood at the foot of the tree, which is cut down about 12 feet from the ground, and carries with it a number of small trees in its fall. Within three months after its felling, during the first rains of the monsoon, the cardamom plants in the soil begin to show their heads all over the cleared ground, and before the end of the rainy season, October, they grow two or three feet. The ground is then carefully cleared of weeds, and left to itself for a year, and then, 20 months after the felling of the great tree, the cardamom plants are the height of a man, and the ground is again carefully and thoroughly cleared. In the following April, the low fruit-bearing branches shoot forth, and are soon covered with clusters of flowers, and afterwards with capsules. Five months afterwards, in October, the first crop is gathered, and a full crop is collected in the following year. The harvests continue for six or seven years, when they begin to fail, and another large tree must be cut down in some other locality, so that the light and air may cause a new crop to spring up. The harvest takes place in October, when the grass is very high and sharp, sorely cutting the hands, feet, and faces of the people, and concealing numerous large leeches. The cultivators pick the cardamom capsules from the branches, and convey them to a temporary hut, when the women fill the bags with cardamoms, and carry them home, sometimes to distances of ten or twelve miles. Some families will gather twenty to thirty maunds annually, worth from 600 to 1000 rupees. The cardamom tracts of Travancore are almost all granitic and gneiss. The smaller capsules, or lesser cardamoms, are the most valuable. The *Elettaria* cardamomum is also cultivated in Ceylon, and a species occurs wild. The Karen forests of Tavoy and Mergui abound with cardamom plants; and, while subject to the Burmese government, the Karen were required to collect the seeds and pay them in as tribute; but they now employ their time more profitably. When they did collect, they were in the practice of mixing a spurious kind of cardamom with the true produce of a plant belonging to the genus *Amomum*, believed to have been *A. cardamomum*. The cardamom called by the Chinese Yang-chun-sha, the hairy China cardamom of pharmacologists, is said to be produced in the province of Kwang-tung.—*Madras Ex. Jur. Rep.*; *Mrs. Mason, Voigt*; *Crawford's Dictionary*; *Thwaites, En.*; *Drury, Cochín*; *Rozb. i. 72.*

CARDAMOMS, bastard or wild.

Kapulaga, BALI, JAV.,	Kurtocha, . GUJ., HIND.
MALAY.	Hil kilan, . . . PERS.

Wild or bastard cardamoms are much larger than the true cardamom, more pungent but less aromatic, with a strong camphoraceous taste. They are not much esteemed, and are only used by the poorer classes of natives as a substitute for real cardamoms. They are brought to Bombay from the Malabar coast. The wild or bastard cardamom of Siam is produced by *Amomum xanthioides*, *Wallich*; the seeds have been imported into England, while the empty capsules found in the drug shops of China are exported from Siam. The plant bearing scitamineous fruit,

Careya sphaerica, Roxb., is almost identical with *C. arborea*. It grows in the Northern Circars, in the mountains at Chittagong, and at Moulmein. Its bark serves as cordage, and is used as a slow match for guns. It has large greenish-white flowers, with some deep red filaments.—Roxb. ii. 636.

CARHARAS, in the Konkani. There were human sacrifices here to Renuka Devi.

CARIARI. HIND. *Gloriosa superba*.

CARICAL or Karikal, a small settlement belonging to France, between Tranquebar and Nagore.

CARICA PAPAYA. Linn. Papaw tree.

<i>Papaya vulgaris</i> , Lam.	<i>Papaya carica</i> , Gertn.
Galang-castila, . . . BALL.	Papa, Bati, . . . MALAY.
Thin-baw, . . . BURM.	Papoa umbalay, MALEAL.
Them-baw-thee, . . .	Pepol, . . . SINGH.
Muh-kwa, . . . CHIN.	Pappali maram, . . . TAM.
Papaia, . . . HIND.	Madana anapa chettu, TEL.
Arand Kharbuja, . . .	Madhurnakam, . . .

This plant, one of the Papayaceae, is found throughout India, and grows without much care. The fruit is gathered in a green state, is dressed as curry and in tarts, and when ripe it is used as a dessert. Its dark-coloured seeds taste like the water-cress. The fruit is large and oblong, suspended upon the leafless part of the trunk, like the jack-fruit; the surface when ripe is a pale orange yellow. A milky juice exudes on incision from the rind; and the rind and seeds are deemed in the Mauritius a powerful vermifuge. Tough meat, rubbed with this juice, becomes tender, without any injurious property being communicated to it. The flesh of animals fed on the leaves and seeds is said also to be remarkably tender, but this seems unlikely. And in Bengal, Mahomedan table servants use the juice with the view of softening beef-steaks and old fowls. The leaves are used by the negroes in washing linen, as a substitute for soap. Pulp of the fruit is eaten with pepper and salt. Juice of the pulp removes freckles.—Roxb. iii. 824.

CARICATURE PLANT, or face plant, *Justicia picta*. The white portions on its green leaves present caricatures of the human face. *Graptophyllum hortense* of the Indian Archipelago is also so called from the curious variegation of its leaves.

CARIM CORINI. MALEAL. *Justicia ecbolium*. Carim-gala, *Pontedera vaginalis*. Carim-pana, *Borassus flabelliformis*. Carim-tumba, *Anisomeles Malabarica*.

CARIMON, two small islands, Great and Little, off the Malay coast. They command the entrance to the Straits of Malacca.—Horsburgh.

CARINARIA, a genus of Gasteropod molluscs, in Asiatic seas. *C. vitrea*, *C. fragilis*, *C. Mediterranea*, and *C. cymbium*, are recorded. The shells of this genus are known to collectors under the names of Venus Slipper and the Glass Nautilus. *C. vitrea*, Lamarck, has a beautiful transparent vitreous shell.

CARIN CHEMBI. TAM. *Coronilla picta*. Carin kulloo, glass. Carin serigum, fennel flower, nigella seed, *Nigella sativa*.

CARI NUCHI. TAM. *Gendarussa vulgaris*.

CARIRAM. MALEAL. *Strychnos nux vomica*.

CARISSA CARANDAS. Linn.

<i>Capparis carandas</i> , Gmel.	<i>Elchites spinosa</i> , Burm.
Kurumohi, . . . BENG.	Maha-karomba, . . . SINGH.
Bengal currants, . . . ENG.	Kalaka, Kalapa, . . . TAM.
Kurunda, . . . HIND.	Perin-kalaka pallam, . . .
Kile, Keelay, MALEAL.	Pedda kalivi pandu, TEL.
Karamurda, . . . SANSE.	Vakka, also Vakudu, . . .
Krishna-pak phula, . . .	Gotho, . . . URIA.
Sushenas, Azeigna, . . .	

A large thorny bush, cultivated for its fruits, but grows abundantly wild in the Kangra and the Kotah jungles, and in March and April fills the air with the fragrance of its blossom; also grows wild in most parts of the Dekhan, bearing a dark blue-coloured berry when ripe; and this is sometimes eaten by Europeans, and in the green state is made into tarts, jellies, and pickles; the jelly is considered inferior to none made of other Indian fruits. The fruit is about the size of a large olive, and when ripe is black, and has a very pleasant taste, somewhat like a damson. This species is a marked exception to the generally poisonous nature of the Apocynaceae family.—Roxb. 1687; Mason; Dr. Stewart; Capt. Macdonald.

CARISSA DIFFUSA. Roxb.

Gau, . . . HIND.	Kurumudika, . . . SANSE.
Garna, Garunda, . . .	Waa-kailu, . . . TEL.
Mardak, . . .	San Kurunda, . . . URIA.

This shrub is a native of the Ganjam district, and from thence northward to the mouth of the Hoogly, and common throughout the Panjab. Its small white or pink flowers about April perfume the air around. The wood is used for combs, in turnery, etc., and as fuel. A Kangra authority states that the very old wood gets quite black and fragrant, and is sold at a high price as Aggar, or Ud-i-Hindi.—Roxb. i. 689; Dr. Stewart.

CARIVAN-SARAI, in Persia and India, a halting-place for travellers, generally a house with many apartments, either opening into an open quadrangle or to the outside road. It is from karwan (caravan), a cortege, and sarai, a rest-house; the chattram of the Tamil people, and dharmasala or sarai of N. India. See Sarai.

CARI-VILLANDI. MALEAL. *Smilax ovalifolia*.

CARLESS, CAPTAIN, J.N., author of a Survey Report of the Mouths of the Indus. He and Lieutenant Grieves carried on important surveys in the neighbourhood of the Indus. He wrote an account of a visit to Beylah, Bom. Geo. Trans. i. p. 304; Memoir on the Gulf of Akaba, ibid. p. 172; Evaporation in the Red Sea, ibid.; State of the Kakewarree Mouth of the River Indus, ibid. p. 876; Account of Hot Springs at Peer Muggun near Kurrachee, ibid. 1840, p. 16; Remarks on the Course of the Hurricane which occurred on the Malabar Coast in April 1847, ibid. 1849, viii. part i. p. 76; Memoir to accompany the Survey of the Delta of the Indus, ibid. part iii. p. 328; Account of the Inscriptions on the Rocks of Shren Waj, near Jedda, Red Sea, Bom. As. Trans. ii. p. 273.

CARLI-CAVES, in the Western Ghats, near the Bhor ghat. The wonderful galleries and colossal elephants of its caves are dug out of solid trap. See Architecture; Buddhism; Caves; Karli.

CARLUDOVICA PALMATA, a tree of Panama. Panama hats are made of its leaves; they are made in Veraguas, Western Panama, and Ecuador, and are worn in the W. Indies and Central America. It might be introduced into India.

CARMA. SANSE. The name of one of the Kanda or general headings of the Vedas. This chapter relates to works; the other two, Gnyana and Upashana, relate to faith and worship. See Vidya.

CARMEL, a small range of hills extending six or eight miles inland in a S.E. direction from the

CARMINATIVES.

Bay of Acre. Mount Carmel is a termination of the chain of hills commencing at the plain of Esdraelon to the S.E. The valley of martyrs, a very narrow dell open to the sea, is near, as also the garden of Elias. The holy fountain of Elijah is close. The cistern seems to have been hewn in the rock, and is about six feet deep, full of clear, delicious water.—*Skinner's Overland Journey*, i. p. 101; *Robinson's Travels*, i. p. 196.

CARMINATIVES. The following are largely used medicinally and for culinary purposes:—

Pimpinella anisum, common anise.
Illicium anisatum, star anise. Badian khatai.
Anthemis nobilis, chamomile. Baboone.
Lavandula vera, lavender.
Ruta graveolens and other sp., rue. Sudab.
Andropogon iwaranchusa. Roosa.
Anethum graveolens, dill. Sonf.
 „ sowa. „
 „ panmori. „
Carum carui, caraway. Zeera seeah.
 „ nigrum. „
Eugenia pimento, allspice.
Amomum zingiber, ginger. Ada.
Feniculum officinale, fennel.
Molaleuca cajaputi, cajapat. Kyapooti.
Juniperus communis, juniper. Hooper.
Piper cubeba, cubeba. Kubab chinee.
Caryophyllus aromaticus, clove. Long.
Laurus cinnamomum, cinnamon. Darchinee.
Juniperus sabina, savino.
Ocimum basilicum, basil. Tulsī.
Rosmarinus officinalis, rosemary.
Moringa pterygosperma, sohanjuna.
Mentha piperita, peppermint.
 „ pulegium, pennyroyal.
 „ viridis, spearmint. Pudina.
Amomum cardamomum, cardamom. Elachoe.
Origanum majorana, marjoram.
Sassafras officinale, sassafras.

CARMINE. A beautiful pigment prepared from cochineal, discovered accidentally by a Franciscan monk of Pisa, who, having formed an extract of cochineal with salt of tartar, for the purpose of employing it as a medicine, obtained a fine red precipitate on the addition of an acid. Homberg, in 1656, published a method for preparing it. The makers in some of the principal towns of Europe succeed in preparing different varieties of it of greater or less purity and lustre. Many of their processes are kept secret; and although the chemistry of the art is well understood, yet there are certain details of manipulation, and an empirical knowledge of the effects of temperature, doubtless acquired after long experience and many failures, which confer on the carmines of some makers a greater lustre than on those of others. The use of carmine has of late years been extended to the manufacture of superfine red inks, of artificial flowers, and to silk-dyeing. Carmine is the finest red colour which the painter possesses. It is chiefly used in miniature painting and in water colours. It is made in large quantities in Paris. Carmine is one of those colours called lakes, a term applied to certain colouring substances which behave like acids, and combine by precipitation with a white earthy basis, usually alumina. Carmine is the richest and purest portion of the colouring matter of cochineal, isolated in the manner here alluded to. Various imitations of carmine are prepared for the use of those who exhibit rouge on their cheeks. French carmine is superior to that of English manufacture, and the superiority is said to depend on the influence of light on its formation and precipitation; the clear sky of the south of

CARNELIAN.

France being more favourable for the process than the more hazy atmosphere of England.—*Tomlinson*.

CARNAHUBA, a tree of S. America, Havana, and Mexico, which should be introduced into India. Humboldt and Murichi have described it as the tree of life. Cattle eat the heart of the young tree, and at its full growth a fecula is obtained from it. Its fruit is also nourishing. But its chief product is the wax which covers the surface of its young leaves, in the form of a glutinous powder. When melted by heat, it cannot be distinguished from wax of the honeycomb.—*Marius*.

CARNATIC, an ancient name of the table-land in Southern India, above the Eastern and Western Ghats, known as the Balaghat; to this region, though the people speak Canarese, the name is now never applied, but it is now given to the country below the Eastern Ghats, or Paen Ghat. Its ancient kingdoms were the Pandya, Chera, Chola, and Calinga. In B.C. 75 an expedition left the eastern side of the Peninsula, from ancient Calinga, and formed a colony in Java. The Pandya dynasty ruled in parts of the south of the Carnatic, with varying fortunes, from the 4th or 3d centuries B.C. At present it is a province on the Coromandel coast, about 500 miles long from north to south, and averaging about sixty miles broad. From the 16th to the 18th centuries, it was overrun by Mahratta, Mahomedan, French, and British soldiery. Sadut Oollah was ruler of the Carnatic from 1710 to 1732, and was succeeded by his nephew, Ali Dost. Ali Dost was killed in battle against the Mahrattas, and was succeeded by his son, Sufdar Ali. Of his two daughters, one married Chunda Sahib. Chunda Sahib seized on Trichinopoly in 1736, but the place was taken by the Mahrattas, and Chunda Sahib was made prisoner, and lingered for eight years in prison, where he was murdered by the raja of Tanjore. Sufdar Ali was assassinated by his brother-in-law, Murtuzza Ali, leaving a minor son; but this youth also was assassinated, while Anwar-ud-Din was his guardian, and Anwar-ud-Din succeeded to the throne as Nawab of the Carnatic. During the conflicts for supremacy in Hyderabad and the Carnatic, between the French and British, naval and land battles were fought at Damalachery near Madras, at Amboor on the Pennar river, near Gingee, at Valconda on the Arni, at Cauveryjauk, at Viceravandi Bahur, at the Golden Rock, Sugar Rock of Trichinopoly, at Wandewash, also off Negapatam, Tranquebar, and at Fort St. David. Anwar-ud-Din, when about eighty years old, fought and fell at the battle of Amboor, in 1749; his son, Mahomed Ali, fled to Trichinopoly, but he was acknowledged by the treaty of Paris in 1763. From that time till his death in 1795, the Carnatic was occasionally under his rule, and at times under the civil and military administration of the British. In 1795 he was succeeded by his eldest son, Umdat-ul-Umra, who died in 1801, when the British put aside Umdat-ul-Umra's son, and placed his nephew, Azim-ud-Dowla, on the throne. The British, in 1856, on the demise of Mahomed Ghous, grandson of Azim-ud-Dowla, finally abolished the titular nawab, from which followed long efforts to seat the second son of Azim-ud-Dowla. The people of the Carnatic are of the Dravidian stock, and speak the Tamil and Telugu languages.—*Malleon's French in India*.

CARNELIAN, quartzose minerals so called, be-

cause some kinds are of a flesh colour, from carnis, Latin, though others are white. In Japan they are found in vast quantities; and they are also collected in the province of Gujerat, at Cambay. Many of the antique gems are engraved in carnelian, and it is now much used for seals. Carnelian is very common in Burma, and has been found at Moopoon and Mergui. One of its Burman names means 'fowl's blood.' See Cambay Stones.

CAR-NICOBAR, the most northerly of the Nicobar islands. See Nicobar.

CARNIVAL. This name for the Roman Saturnalia is derived from the sun-god Carneus, the Celtic Apollo, whose shrines were on the coast of Brittany; and one monument remains at Carnac sacred to the manes of the warriors and of the sun-god. The character of this festival was entirely oriental, and accompanied with the licentiousness which belonged to the celebration of the powers of nature. Even now, although Christianity has banished the grosser forms, it partakes more of a pagan than a Christian ceremony.—*Tod's Rajasthan*, i. p. 547.

CARNIVORA, an order of the mammalia constituting flesh-eating animals, beasts of prey. They include the genera felis, hyæna, canis, vulpes, and others in the families Ursidæ, Melididæ, Mustelidæ, Felidæ, Viverridæ, and Canidæ. The lion and the leopard occur in Asia and Africa, the tiger in Asia only. See Mammalia.

CARNIVOROUS PLANTS are found in both hemispheres. The *Drosera rotundifolia* or sundew is one. When an insect alights on its central disc, it is instantly entangled by the viscid secretion there, and the surrounding tentacles after a time bend and ultimately clasp it on all sides, and the insect is digested. *D. Anglica*, *D. intermedia*, *D. capensis*, *D. spathulata*, *D. lunata*, *D. filiformis*, *D. tri-nervis*, *D. heterophylla*, and *D. binata*. *Dionæa muscipula*, or Venus' flytrap, *Aldrovanda vesiculosa*, *Drosophyllum Lusitanicum*, *Roridula dentata*, *Byblis gigantea*, have similar functions, as also *Pinguicula vulgaris*, *P. grandiflora*, *P. Lusitanica*, with *Utricularia vulgaris*, *U. neglecta*, *U. clandestina*, *U. montana*, *U. velumbifolia*, *amethystina*, *Griffithii*, *cærulea*, *orbiculata*, *multicaula*, *Darlingtonia Californica*, *Sarracenia purpurea*, and *S. flava*, with *Heliamphora nutans*.

CAROB TREE, or St. John's Bread, *Ceratonia siliqua*, of south Europe and the Levant. Its legumes are used for cattle-feeding. The seed is the original of the jeweller's carat.

CAROLINA PADDY. Rice seed was originally taken from India to North America, and its cultivation has been so successful in Carolina, one of the United States, as to have led to its being re-imported into India as seed.

CAROLINAS, an extensive chain of islands which stretch nearly east through the middle of the Pacific Ocean, betwixt the parallels of lat. 7° to 10° N.

CARON OIL of Chittagong. The crooked tree from which this is obtained, grows in wet places near fresh water, very common in the sides of ditches which surround native dwellings. The seed is bean-shaped, and produced in a flat pod; the pods grow several together. The flower is pink and white, of the shape of a bean flower or blossom. The oil is used for burning in native lamps, and in large quantities for boiling with dammer to soften it for the seams and bottoms of

ships. It is also often used by native practitioners for the cure of itch. A maund of seeds costs Rs. 1-8, and the extraction of the oil by heat costs 8 annas; the oil produced amounts to 6½ seers per maund.—*Local Committee, Chittagong*.

CAROOKUVA. TAM. *Zizyphus trinervus*.

CAROONUCHI. TAM. *Gendarussa vulgaris*.

CAROOR, in long. 78° 9' E., and lat. 10° 50' N., 50 miles from Trichinopoly, on the bank of the Cauvery, has a strong fortress. It was the capital of the ancient Chera kings. See Carnatic.

CAROXYLON GRIFFITHII. Moq.

Salsola Griffithii. | Lagkame, Khar. . HIND.

A Central Panjab plant, furnishes by lixiviation some of the saiji or carbonate of soda of commerce.—*Stewart*.

CARP, the genus *Cyprinus* of fishes. The gold carp of China is the *Puntius (cyprinus) auratus*, *Lin.* In India carps are habitual filth-eaters.

CARPENTER BEE, *Xylocopa tenuiscapa*, *Westw.* Another species found in Ceylon is the *X. latipes*, *Drury*.—*Tenent's Ceylon*, p. 418. See Bee; Beetle; Insect; *Xylocopa*.

CARPENTERS are one of the five Hindu artisan castes of India, and wear the poitu or zonar. They claim to be Brahmans, and worship chiefly Visvakarma, the artificer of the Hindu gods. Those of Travancore follow the law of descent by the sister. See Hindu; Poitu; Polyandry.

CARPETS.

Galim, Zuli, . . .	ARAB.	Prangmadani, . . .	MALAY.
Tapyten, . . .	DUT.	Kalasa, Xatifah, . . .	"
Vloer-tapyten, . . .	"	Ghalichah, . . .	PERS.
Tapis, . . .	FR.	Kowru, Kilimi, . . .	RUS.
Teppiche, . . .	GER.	Alfombrias, Aleitifas, . . .	SP.
Shatranji, . . .	HIND.	Tapetes, . . .	"
Tappeti, . . .	IT.	Jam'kalam, . . .	TAM.
Parimadani, . . .	MALAY.	Jameana, . . .	TEL.

Carpets, either of cotton, silk, or wool, are employed in the eastern countries, from the south of India to Turkey in Europe, for domestic use, for praying on, and for occasions of state. The carpets employed by the ancients are thought to have been of the nature of tapestry, and used for covering couches rather than floors. True carpets seem to have been early employed in Persia; and those called Turkish were probably originally of Persian manufacture, whence the manufacture might have been introduced into Turkey, and where, as well as among the many Turkoman tribes and in Northern Africa, it is still practised. The Persians still remain unrivalled in the happy combination of colour and pattern for which their carpets have long been distinguished, whence the most varied hues and deepest tints are brought into close approximation, and, far from offending the eye, please by their striking, because harmonious, contrasts. The places in India where a regular manufacture and trade are carried on, are Jubbulpur, Bareilly, Lahore, Merut, Rungpur, Benares, Mirzapur, Allahabad, and Gorakhpur in Bengal; North Arcot, Tanjore, Ellore, and Malabar in the Madras Presidency; and also at Mysore, Bangalore, Warangal, Bellary, Masulipatam, as well as at Shikarpur, Khyrpur, and Hyderabad in Sind. Those of Bengal commend themselves by extraordinary cheapness; they are extensively used throughout India, and also somewhat largely exported. In point of texture and workmanship, however, the rugs from Ellore, Tanjore, and Mysore, though they are comparatively much dearer, are greatly preferred.

Kermanshah has a manufacture which adds much to the wealth of its province; none can be more rich, soft, and beautiful. *Persian carpets* are made also at Meshed, in the Turkoman country, and in Khorasan, and are justly celebrated for the beauty of the patterns, the fineness of the wool, and the durability of the colours—vegetable dyes—amongst others, a green not made elsewhere, conjectured to be saffron and indigo. Some of them fetch high prices in the country itself, as £6 or £8 for one of two yards square. The finest are made at Sena, and there is a famous manufacture carried on at Fernahoun, near Teheran. Carpets of any size can be made there. The finest carpets of all used to be made at Herat; and one in the Chahal Minar at Isfahan was 140 feet long and 70 feet wide. Large numbers were formerly exported to England through Trebizond, and they were sold nearly as cheap in London as in Persia, owing probably to the course of trade. Persian and Turkey carpets are most esteemed.

Eastern carpets have attained great popularity in Europe since the middle of the 19th century, but it has not led to any very general diffusion of real knowledge about them. The ordinary buyer knows three classes, and only three, which he roughly distinguishes as Turkey, Indian, and Persian carpets. The expert is, of course, a good deal more exact than this; but even his knowledge is, as yet, vague and confused. The most exquisite products of the loom were frequently destined for the adornment of the holy Kaba, or some scarcely less venerated shrine. Sometimes the whole interior of a mosque, such as that at Meshed Ali, was hung with beautiful carpets; and the Mihrab, or niche towards Mecca, was always a favourite object for such ornamentation, which in this case corresponds to the altar-hangings of Europe. Mats of a less costly nature were spread on the floor; and it is recorded that in 1012 A.D. the mosque of El-Hakim at Cairo was strewn with 36,000 ells of carpeting, at a cost of 5000 dinars, whilst the Azhar required 13,000 ells of striped mats a year. The Kaba at Mecca was covered with hangings in the 'days of ignorance' before Islam was preached, and cloths from the Yemen, or a white Chinese silk carpet, covered the shrine; and later on the famous white and gold fabric of the Copts, or heavy velvet or plush carpets from all parts of the East, were employed in the decoration of the Mecca temple. The rulers of the Mahomedan world vied with each other in presenting the richest covers to the Kaba; the very Mongol Khans of Persia sent gorgeous hangings; and we read of a cover studded with gold and pearls and precious stones to the value of 250,000 gold pieces. Difficult as it is to classify the designs of eastern carpets with any precision, they may roughly be divided into two classes, the floral and the geometrical; and that of these the former is the design affected by the higher and Aryan races, the latter the design of the lower and Turanian. The old woman whom Vambery saw in Central Asia, tracing the pattern of the carpet on the sand for the girls to follow, is the typical designer of the Turkoman and Mongolian races; while the native Indian and Persian work is found in lovely conventionalized flowers and leaves, the 'tree of life' and other symbols. There is always, however, a difficulty of distinguishing between the carpet work of one district and another, from the prevailing

custom of pilgrimages in the East. Every pilgrim brings his carpet with him to Mecca, or Kerbela, or Kairwan,—he may take more than one, for an offering, or for sale,—and ultimately these find their way, for nothing or for nominal prices, to the priests and their hangers-on, who re-sell them for exorbitant sums as relics to the outgoing pilgrims. Thus carpets of every style and character pass from hand to hand, and, coming from southern India, make their way to Smyrna or Tashkend, the promiscuous dispersion becoming one of the chief secondary causes of the cosmopolitan character of Saracenic art, and of its diffusion over so vast an area, and at the same time serving to make the origin of that art almost hopelessly obscure. In Northern Africa, it is only in Kairwan that the genuine Tunisian carpets are now manufactured. In all other parts of the regency European designs have been adopted, with the inevitable result of destroying all that was quaint and original, and substituting vulgar and egregious patterns. The old Moorish style of working in iron has thus far escaped contamination, and large Saracen locks and giant keys, charmingly ornamented, may still be procured. The Susanjird kind, among the various sorts of weaving that go by the name of Persian carpet-work, has always held the first place. We read of the Susanjird carpets in the palace of the Abbasi khalifs of Bagdad in the tenth century; and the nobles of the East were emulous of obtaining pieces of this fine work for the floors of their scarcely less magnificent residences. In the sale of the carpets of the Fatimite khalifs in 1067, a carpet fetched a thousand dinars—at a time when dinars weighed more than the present half-sovereign; and a Mameluke prince of the fourteenth century gave 70,000 pieces of silver for a silk carpet wrought with gold. Susanjird work was also highly prized in Europe. Byzantine palaces were found to need these rich carpets as much as the mansions of Bagdad; and the merchants were given carte-blanche as to the price they paid for their commissions. Such luxuries were only for the very rich. Susanjird carpets appear always to have been confined to the houses of the great or the houses of God, which the great chose to honour; but the anarchy which came of the Tartar invasions affected the art of weaving in a disastrous manner. Tamerlane, though his exploits were embroidered on the old tapestry which the Persian ambassador brought to Philip III. of Spain, was a chief destroyer of the skill which depicted him. Whatever the origin of the name, Susanjird designates a loom embroidery which, though it may be of various kinds, possesses a distinct character of its own. Susanjird may be knotted (like plush) or plaited (like Gobelin work), or it may combine both methods; but its essential characteristic is flat relief. The combination of the knotting and plaiting (which was not done as it is at the present day) gave the work a peculiar character. The Susanjird carpet has the effect of a picture; the embroidery is like painting; and the general impression is soft and delicate. The subjects represented are either figures or conventional ornaments; and the figures include, not merely animals, but maps and plans of towns, like mediæval work 'cum historiâ' or 'à ymages.' The ornamental work is chiefly derived from the vegetable world, and corresponds to the European designation 'à arbres.'

In *Persian art* the treatment is essentially symbolic. The lion or the eagle is represented as the symbol of power or rule; indeed, on a gold border in the Vienna Museum the figures are explained by the Arabic word for dominion, and another piece has 'sultan' under a lion's figure. A descending eagle signifies bad luck, but a flying or standing eagle means good luck; while the unicorn welcomes the advent of a good prince. Hounds and leopards for hunting occur in Persian patterns, and stand for fame or increasing honour. More interesting are the ornamental designs derived from trees and flowers,—the embroidery '*à arbres*.' Sir George Birdwood remarks that the great source of the majority of Persian carpet patterns is the tree of life, the straight trunk with long regular parallel horizontal branches terminating in buds, which pervades all eastern and much western decorative art. Sometimes on Persian rugs the entire tree is represented, but generally it would be past all recognition but for small representations of it within the larger. In Yarkand carpets, however, it is seen filling the whole centre of the carpet, stark and stiff, as if cut out of metal. In Persian art, and in Indian art derived from Persian, the tree becomes a beautiful flowering plant or simple sprig of flowers; but in Hindu art it remains in its hard architectural form, as seen in temple lamps, and the models in brass and copper of the sacred fig as the tree of life. It is extremely curious to trace the history of the tree of life (and the tree of healing, for there are two kinds in Persian decoration) through its various stages, and to find its head in the knop and flower, or cone and flower pattern, as we recognise it on Assyrian marbles and Egyptian wall-paintings, on Indian monuments, Cashmere shawls and Italian brocades; in the Greek honey-suckle and palmette scroll, and the Renaissance shell; and the tongue and dart, egg and tongue patterns in classical mouldings. The persistence of the tree of life, or the pattern formed from its head, in eastern and western decorative art, is very remarkable, and, it should be added, very admirable. That the *Tapisserie de Haut Lisse* was derived from the East seems beyond a doubt. At the end of the twelfth century the Paris statutes make mention of '*tapiers sarrasinois*,' in contrast to '*fabricans de tapis nostrez*;' and in 1302 we hear for the first time of an '*autre manière de tapiers que l'on appelle ouvriers en haute lice*.' It was probably about the time of the Second Crusade that this oriental high-warp tapestry found its way into France.

Printed calicoes of large size and suitable patterns are used for covering the floors in India; but the most common carpets employed there are made of cotton, called *shatranjis*. These are of different colours, usually blue and white, in red or orange stripes, squares, or stars; some are of large size, and well suited for halls and tents, being thick and strong in texture, the two surfaces alike, smooth, and without pile. They are manufactured in different parts of India, at Murshidabad, Rangpur, Agra, etc., and at many places in the Madras Presidency. Another kind of cotton carpet is that with a pile of cotton, and similar in appearance to a Turkey carpet, manufactured at Sasseram—white, with a centre and border in blue; and they are made also in the Hyderabad country with every variety of coloured pattern.

Cotton carpets for tents are made at Cumbum,

Rajamundry, and other parts, the price being under one rupee the square yard. They are generally in broad stripes of red and shades of blue. Small carpets of this description are produced in almost every district, and are used for sleeping on. They are somewhat less in price in proportion than the larger ones. Carpets of a small description, woven with wool, in stripes on a stout cotton web, are made at about the same cost.

Silk is another material of which carpets are made in the East; and the pile, being of silk, imparts both softness and richness to the surface, while the colours are clear and brilliant. They are beautiful as specimens of variety in pattern, brilliancy in colouring, as well as of pleasing harmony in the whole. Silk carpets of small size, are made in Tanjore, Hyderabad, and Khyrpur.

Woollen carpets, of large size, and of beautiful and well-coloured oriental pattern, are made at Mirzapur, Gorakhpur, Bangalore, Vellore, and other parts of Madras. Mirzapur is most famous in India for its carpets, which are frequently sold in Britain as Turkey carpets. The woollen rugs from Ellore are admired for their general characteristics of oriental pattern and colouring; and these, as well as the large carpets from Mirzapur, all in the same style, are well adapted for sale in Europe. At the Madras Exhibition of 1857, there was a large display of carpets and rugs, viz. 1. The imitation Axminster or close-nap woven carpet; 2. The short velvet pile or tapestry carpet and woollen rug; 3. The long velvet pile or imitation Turkey carpet; 4. The silk or velvet pile carpet. Of the Axminster carpets, there were some very good specimens of close-nap carpets from Warangal, the colours clear and bright, but a sameness in the patterns. The carpets were strong, soft, and very close in the weaving. The only one for which Warangal is famed is Persian carpets, which are made there of all sizes, and of worsted, cotton, or even of silk. The weavers are all Mahomedans, and are congregated principally at Mutwara, although there are a few looms within the Warangal fort. The weavers are drunken, turbulent, and ignorant, possessing no capital, and dissipating in excess the little money they may procure on accomplishing a piece of work. Carpets, chiefly of a small size, about two yards long and a little more than a yard in breadth, are made for the Hyderabad market, money being advanced to the weavers by the dealers there. A worsted carpet of this size and shape costs at Warangal from 2½ to 2¾ rupees. A cotton carpet there is twice the price of a worsted one. A silk one is very highly priced. A common trick among these weavers is to substitute hemp for worsted.

Of the *velvet pile carpets*, some large and creditable specimens from Ellore were closely woven, bright and harmonious in colour, and the patterns more varied than those from any other locality. Some of the rugs from Tanjore were also very tasteful.—(*Madras Exhibition Juries' Reports*). At Iyempettah in Tanjore they make very handsome carpets of silk.

The *rugs* and *carpets* produced at Ellore vary in price from 2½ to 4 or 5 rupees a yard. They are of dyed wool upon a cotton web. The colours are not so bright as those given in Europe. Commoner descriptions, of the size

of small hearth-rugs, are exported thence to England and Persia.

Dr. Walker (As. Jo. 113) gives the following description of carpet-weaving at Hunumcunda, which is generally applicable:—The carpet loom is nothing more than the common native loom, placed vertically instead of horizontally. The waft is of thick, strong cotton twist, being arranged by no wafting mill, but by one of the workmen going round and round two stakes fixed in the ground, and dropping the thread at each as he passes. In the loom it is kept on the stretch by two strong billets of wood, the threads being attached by separate loops of cotton fixed to a bamboo, which is elevated or depressed at the will of the weaver. The worsted is held in the left hand, and a crescent-shaped knife in the right, the fingers of both being left free. The inner thread of the waft is then seized, the worsted wound round the outer, crossed on itself, and the extremity drawn out, by which it is made to descend in the form of an open figure of eight to be snipped by the curved knife. It is superfluous to say that this is the work of an instant. When the pattern is new or difficult, the order and position of the worsted threads is changed by a reader in a kind of rhyme. On a row being completed, the warp, in the shape of a cotton thread, dyed dark brown by the bark of the *Swietenia febrifuga*, is forced down by means of an iron-toothed comb, in form something like an adze. The whole is completed by cutting the worsted to its proper length by large scissors held steadily against the waft. Infant labour is employed and preferred in Warangal carpet-weaving, it being averred that their more limber finger-joints are best fitted for the finer parts of the work. Dried sprigs of tulsi (*Ocimum sanctum*) and bunches of *Lepidagathis Indica* are attached to the loom frames. The workmen say that these make their labour go on more cleverly. Twelve different worsteds are employed. The blue is produced from indigo; the yellows and the sulphur yellow from boiling the sulphur yellow in water impregnated with carbonate of soda, in which a little turmeric has been mixed. The deepest yellow is produced by dipping the same in the potash ley. The reds are all produced by lac dye dissolved by tamarind juice, with sulphate of alumina and potash as a mordant. The depth of colour depends in three cases upon the original black, brown, or white colour of the wool; in the fourth, on the length of time the last description of wool was allowed to remain in the dye. The greens are produced by immersion in indigo, and then in pulas or turmeric; their degrees also depend on the original colour of the wool. Bengal indigo is always preferred to the home manufactured by the worsted dyers. Cotton carpeting is prepared in the same way as the woollen. As a general rule, the lighter worsteds wear the longest. The red seems to render the wool brittle, and some destructive agent seems to be employed in preparing the wool. If the weavers would wash the wools thoroughly with soap, both before and after dyeing, the carpets would probably be far more durable.

At *Ellore* the wool is cleaned and spun. The former is a rather complicated process, but on its proper performance depends the possibility of afterwards spinning the thread without the hair

starting out too much,—which is sure to be the case if very hot water is used,—and the thorough fixing of the dye. When the sheep is sheared, the wool contains a large amount of dirt and grease, sometimes as much as 50 per cent. of the whole weight, and this must be entirely removed before anything else can be done. Steeping in water, hot and cold, washing with soaps and various acids, fumigation, are the plans usually adopted; but the *Ellore* people keep the process a secret. After this the wool is thoroughly beaten out by filling it with a line of gut stretched on a bow. This turns the matted, coarse substance out from the sheep into a beautifully soft wool. The spinning is carried on in the ordinary manner of India. After the spinning comes the dyeing, which is not shown to strangers, and from that the thread is taken straight to the weavers. *Ellore* carpets are made on upright looms, the operators sitting on the ground, their legs in a hole or trench in front of the work,—not, as in the Gobelin tapestry, behind it. The warp thread is either of hemp, cotton, or wool. In carpets intended for Europe, heupen twine is invariably used; while for India, cotton is sometimes preferred. The woollen warp is mostly confined to the small rugs made up for native consumption. The wool, or cross thread that holds down each successive line of wool, is either hemp or cotton. The warp is always white, the weft frequently coloured. Each little tuft of wool is twisted round two threads of the warp, and thus, as it were, knotted. It is then cut off with a knife to the length of about $\frac{2}{3}$ ths of an inch. When one line (horizontal) of the tuft has been completed, the weft is passed through and beaten firmly down on it by means of an iron comb. The whole line is then trimmed down to the proper length with a pair of scissors. And so the carpet proceeds, bit by bit, and line by line, till completed. Some patterns are far easier to work than others, and the value of the carpet varies accordingly. A good workman does $1\frac{1}{2}$ feet in breadth by 6 inches in length from 7 A.M. to 4 P.M. From two to three annas a day is about the sum on which a fair workman can reckon.

The *Indian cotton carpets* most commonly met with are blue, red, and white. Some few, made of cotton and silk for wealthy people, are extremely beautiful.

The *rugs* made in Bengal vary in length from 3 to $3\frac{1}{2}$ feet, their average width being $1\frac{1}{2}$ feet, and their value from 1 rupee to 1 rupee 10 annas. The rugs from *Ellore*, Tanjore, and Mysore are made of various sizes, and are valued from 2 to 4 rupees each. Those from Shikarpur and Khyrpur, as well as from Hyderabad (Sind), are of a lighter texture, but excellent workmanship; their width is generally uniform, but in length and consequent cost they vary from 2 to 5 rupees each.

The employment of rugs throughout India is most extensive. It is impossible to form an estimate of the annual value of this manufacture, as only the small portion exported is entered in the official records, and as no steps have hitherto been taken to ascertain the local trade.

The finest articles of this description, however, are the *silk rugs* from Tanjore and Mysore, the blending of colours and workmanship being excellent. They are made of all sizes, even up to squares of ten feet; but, being too costly for

general adoption, this manufacture is very limited. Were the patterns and disposition of colour in the native articles better known in Europe, many useful lessons might be learned from them. Woollen carpets are rarely used by Hindus, and the manufacture is seemingly entirely confined to Mahomedans.

The *Shatranji* is a cotton carpet entirely made of cotton. They are used by every European or native throughout India; and the annual manufacture is consequently very considerable, especially in Bengal, where they form a large and important branch of inland trade. They are of all sizes, from that of the largest carpet to the smallest rug, but generally of one and the same pattern throughout India, the only difference being the colour. Blue and white and red and white stripes constitute the prevalent patterns; but, in some, one colour of darker and lighter hues is employed. In Meerut, Bareilly, and Patna, new patterns have of late been tried, but though preferred by the Europeans, are not so by natives, who like the striped patterns, because they wear better in daily use, and do not lose the freshness of colour by washing. The principal localities where shatranjis are manufactured are Agra, Bareilly, Patna, Shahabad, Birbhum, and Bardwan. Those manufactured at Agra are considered the best, and the value of its annual production is about £10,000. The small ones are valued from 3s. to 15s., and the larger ones (carpet size) from £1, 10s. to £4, the price in many cases being regulated by weight.

The *Shahabad cotton rugs* are almost invariably striped. They are cool and pleasant. The smaller kinds are used as quilts for beds. The manufacturers, called in this district Kalleen Bap, are almost invariably Mahomedans. The two local seats of manufacture in Shahabad are Bubbooh and Sasseram. In the former place, from 10,000 to 12,000 rupees' worth are yearly manufactured and sold, and in the latter from 30,000 to 40,000 rupees.

Dhurri is the name of cotton carpets generally made for sale, and are of four kinds, 6 yards long and 2 yards broad, thick and strong, of any colour, and are sold at from 6 rupees to 6 rupees 8 annas. A small kind, used as quilts, weigh from two to three pounds each, and are 1½ to 1¾ yards broad by about 2 yards long; they sell at from 14 annas to 1 rupee 8 annas each, according to thickness and quality. The *hauz-hassica* is a name of the better kind of carpet, and often displays much taste in the arrangement of the striped colours. It is made of any size to fit any room, and is always sold by weight. The price varies, according to quality, from 1 rupee 4 annas to 1 rupee 12 annas, and sometimes as high as 2 rupees 4 annas per seer. It is sold in all the fairs, and in all the large cities around, such as Patna, Ghazipur, Daadnuggur, Gyah, etc. No merchant's or banker's shop or rich native's reception room is complete without these being spread. This is the kind generally used by Europeans for their drawing and public rooms. The small kind of carpet is made for use in *zamin-dari* and other small cutcherries, and is much used from its portability. It is from 3 to 4 yards long and from 1½ to 2 yards broad, and sells at from 3 to 4 rupees each carpet. It is generally made from five colours, from which cause it obtains the name of *dhurri panch rangha*.

Galicha carpets, manufactured in Sasseram, are almost always woollen, of florid but neat patterns, in imitation of the Persian carpet. They are used to a considerable extent by the rich natives in their *zananas*, but by Europeans also. The size usually manufactured is 2 yards long by 1 yard broad, and they sell at from 2 rupees to 4 rupees 8 annas per carpet. The European carpet manufacturer could not compete with these as to price and actual value, as the wool costs but little in India, and the native dyes answer admirably for the purpose; while also the coarse local wools, which would not pay for exportation, answer for carpet work. The colours are harmonious, and there is but little doubt that it would pay any enterprising merchant to export these to Europe. The annual manufacture at present in Sasseram is about 10,000 to 12,000 rupees.

Another kind, in imitation of the above, but wholly of cotton, is also made; prices nearly the same. The patterns are pretty, but they rapidly become spoiled by dirt and dust. They are invariably made of only two colours, blue and white. Ornamental carpets of thread, with a woollen and sometimes with a silken pile, are made up in Multan, Peshawur, Amritsar, Bahawalpur, and Kashmir. Those of Multan are perhaps most celebrated. Those of Ellore and other parts of the Northern Circars are largely sold for use and for export.

The carpets from Cocanada are greatly admired; the ground is white. A floral scroll of blue, red, yellow, and brown divide them into regular geometrical spaces like a tessellated pavement; a flowery cone being inlaid in each white space, and the rows of cones thus formed are alternately coloured red, blue, yellow, and brown. The design is Greek in its simplicity; and in its warmth and glow of colour perfectly oriental, charming the attention, 'caught by each colour till the next is seen.'

India produces also *velvet carpets* embroidered with gold, at Benares and Murshidabad. Costly articles of this kind were contributed to the Great Exhibition of London by the Queen. These rich fabrics are of fine velvet, embroidered with bullion gold. Maharaja Gulab Singh contributed to the Great Exhibition of 1851 a magnificent manufacture of pure silk, nearly an inch thick in the pile, showing to perfection the dyes and the harmonious arrangement of the native artists. In every square foot there were said to be contained ten thousand ties or knots of silk.

In the *colouring* of the carpets of India, full Indian red, broken by flowers or conventional leaves, in which orange predominates, forms a leading feature. A cool, low blue, a green of similar gravity of hue, and soft, creamy white, complete the palette of the Indian designer of these fabrics. Some of the British carpet-dealers had changes effected in this old Indian system. Some white borders was actually bleached, and one or two garish combinations introduced. Colours have been intensified and made flatly uniform, instead of broken and slightly varying as the masses of red and other colours are left by the native weavers. Linen backs have been introduced to meet the orders of some of the British dealers, and complaints of the wearing qualities followed. Both English and French dealers have had changes, more or less important, introduced

into these oriental designs to suit the bad taste of their buyers,—in all such cases, with losses of the exquisite harmony of the native arrangements of form and colour.

Oriental colouring in textile fabrics seems to result from a gift to the various races that produce them. The native designers proceed in accordance with immemorial traditions, and with a certainty that resembles instinct. Of all artistic powers, that of colour, in its highest harmonies, is the most difficult to teach. Though general principles can be imparted by scientific rules, the power of colouring beautifully is undoubtedly one rarely attained. It seems to prevail in races as a special gift. It exists where the knowledge of form is unknown. It accompanies an unconscious sympathy with nature, and seems more allied with instinct than demonstrable by science. Many actually savage nations colour their cloths or wrappers or mats harmoniously, though absolutely devoid of social or mental cultivation. And, on the other hand, as nations have progressed in scientific attainments, the love of colour, in dress certainly, in other ways generally, is diminished. Europe may cultivate the study of colour, and understand its laws; but in textiles of all kinds, from carpets to gossamer muslins and gold and silver tissues, the traditional taste of oriental nations remains unattainable by Europeans. And of European nations those most old-fashioned, least changed from the rude ages of the past, retain the greatest enjoyment and feeling of colour.

If the civilised nations of Europe do not equal the less advanced and even the savage races in their appreciation of colours, they are even less happy in their application of designs; and in Cashmere and throughout India much injury has been occasioned to the manufacturers, alike to their skill and to their profits, by European purchasers inducing them to undertake designs from Europe. The deep tints of native Indian and oriental dyes generally are at once the aspiration and despair of artistic European dyers; and the beautiful elaboration in colour and design, as shown in the work of the weavers of Persia, Turkomania, Kirman, Cashmere, and British India, can only be injured by interference. The workmen know that for the coarser wool of the Panjab, Sind, Baluchistan, and British India, the fine designs of Persia, or the designs of the dense-piled carpets of Turkomania and Kirman, are equally unsuitable, and that only their own bold patterns can be with advantage used.—*Madras Exhib. Jur. Rep.*; *Dr. Watson's Report*; *Mr. J. Rohde, MSS.*; *Colonel C. Davidson in Report of Hyderabad Committee*; *Baron Clement A. de Bode*; *Bokhara and its Amir*, p. 224; *General Ed. Ferrier's Journal*, p. 26; *Sir George Birdwood, Memo.*, 29th Sept. 1879; *do. Handbook Paris Exhibition*, 1878; *Porter's Travels*, ii. pp. 167–201; *Die Persische Nadelmalerei Susandschird, ein Beitrag zur Entwicklungs-Geschichte der Tapiserie de Haute Lisse*, von Dr. Joseph Karabacek.

CARPILIUS, a genus of crabs of the E. Indies, the Cancer of Linnaeus. *C. convexus*, Edwards, is a crab of the Red Sea; *C. corallinus*, Leach, and *C. maculatus*, Leach, the latter the blood-spotted crab, are both of Asiatic seas.

CARPINI. Johannes Carpini, a Franciscan friar, was sent, A.D. 1247, by Pope Clement IV.

to the Tartar camp on the Volga. Carpini travelled through Bohemia, Silesia, and Poland, and on through the vast regions then known under the name of Comania, and now as the country of the Don Cossacks, watered by the Dnieper, the Don, the Volga, and the Yaik, until he at last came to the standing camp of 'Duke Bathy' (Batou, grandson of Chengiz Khan), which afterwards grew into the city of Sarai or Sara, on the Volga. From here he was sent on to the imperial court, where he arrived by way of Lake Balkash at the moment when Kuyuk was being elected to the Great Khanship of the Tartars, in succession to his father Octai or Okkodai Khan, son of Chengiz Khan. On his return journey, passing rapidly through the camps of 'Duke Bathy' and 'Duke Corrensa,' who guarded the Tartar frontier in Europe from the nations of the west, he reached Kiev in Russia within eight months of leaving the imperial court of Kuyuk Khan. He is the first traveller into Mongolia whose narrative we possess.

CARPINUS VIMINEA. *Wallich*. Hornbeam. Shirash, . . . BEAS. Charkhre, . . . RAVI. Cham khuruk, . . . PANJAB. Imar, . . . SUTLEJ.

This tree is found in Nepal and the Sutlej valley between Rampur and Sungnam, at an elevation of 5500 and 6000 feet. Wood esteemed by carpenters. *C. cordata*, *C. erosa*, *C. laxiflora*, and *C. japonica*, *Blume*, occur in Japan.—*Cleghorn, Panjab Report*, p. 64; *Stewart*.

CARPOBALSAMUM, an inferior quality of opobalsam, obtained by expression from the fruits of *Balsamodendron Berryanum*.—*Kunth*.

CARPODACUS ERYTHRINUS, a rare bird in the N.E. of Europe, is a common winter visitant over the greater part of India.

CARPOO COONGILLIUM. TEL. Black dammer.

CARPOORAWALLI. TEL. *Lavandula carnosa*.

CARPOORUM. TAM., TEL. Camphor.

CARPOO ULANDOO. TAM. Black variety of *Phaseolus max*.

CARPOPHAGA, a genus of birds of the family Columbidae. *C. luctuosa*, a fine cream-coloured pigeon of Celebes; *C. oceanica*, one of the nutmeg pigeons; many of both sexes are furnished with a large, round, fleshy caruncle on the bill at the base of the forehead; this is said to be present during the breeding season only.—*Macgillivray, Voyage*, i. p. 244.

CARR, MAJOR M. W., of the Madras army, author of Telugu Proverbs. He perished with all in a steamer, in a cyclone on the W. coast of the Peninsula in the beginning of 1869.

CARRAGANA. Hwang-ting, CHIN. Carrageen moss or Irish moss, *Chondrus crispus*, Lngb., and *C. mammilloeus*, Grev., from the west of Ireland. Used for cattle-feeding and dietetic purposes.

CARRAY ELLOO. TAM. Guizotia oleifera.

CARRAY KEERAY. TAM. *Weberia tetrandra*.

CARRIABOOLUM. TAM. Aloe.

CARRIAGE of goods and persons, in Southern and Eastern Asia, continues from remote ages of the most varied kind, being by conveyances, man, and quadrupeds. The sledge seems to have been the first kind of conveyance in use. A sledge is sculptured on the temple of Luxor at Thebes, resembling that in use by the

London brewers. And sledges are in common use by the Eskimo, the Laplanders, the northern Russians, and in some winters the people of Holland and Belgium; and in the sandy tracts north of Nellore, also in the sandy tracts of the Peninsula of India. All the earlier carts seem to have been fitted with a pole, and dragged by two animals yoked together. But in India at the present day, many bullocks and buffaloes are used singly, the yoke connecting the shafts being made to pass over the neck. A wheeled carriage or car appears to have been in use in Egypt from very early times. It is called a chariot in the Bible, and is shown in paintings and sculptures 4000 years old. Menu, who lived B.C. 1400, and Homer, in the 5th book of the Iliad, describe the portions of them, the spokes, axes, naves, felloes, wheels, tyres. Jabin king of Canaan had 900 chariots. David took 700 from the kings of Syria, and 1000 from the king of Zobah. Solomon had 1400; and his merchants supplied chariots from Egypt for 600 shekels, equal to £60. The prophet Nahum, who lived B.C. 713, alludes to the chariots of Nineveh, and carriages are figured in sculptures of Nineveh and Babylon in hunting and in war. The Assyrian chariots were larger than those of Egypt.

Chariots were used at the siege of Troy, and the Romans had chariots of two and four wheeled cars B.C. 170, Emilius, the Roman consul, had 750 waggons in his train, bearing the spoils of Perseus, last king of Macedonia.

The Scythians are mentioned by Herodotus, B.C. 450, as having in use a rough two-wheeled covered platform cart, and the moveable cover was used as a tent.

Porus, when he met Alexander on the banks of the Indus river, had a number of elephants of large size, and several thousand chariots, each of which carried six persons.

The Persian chariot had scythes and swords projecting. On Alexander's return from India towards Persia, he travelled in a chariot drawn by eight horses. And after his death at Babylon, in order to take his body to Alexandria, a four-wheeled car, 8 feet long and 12 feet wide, was built, and dragged by 64 mules.

The Hackery of Hindustan, called garry by the people, is on two wheels, with a high axle-tree bed, and a long platform, frequently made by two bamboos which join in front and form the pole, to which two oxen are yoked; the whole length is united by smaller pieces of bamboo, tied together and nailed.

The wheels are often of stone or of solid wood cut from a single tree, or built up. The hackery for the rich has a domed roof; the passenger sits under the dome cross-legged, and the driver sits on the pole. It has wing guards on the wheels.

The *Eka* is a one-horse carriage, resembling an Irish car. It consists of a tray for the body, and has a canopy roof. The driver sits on the fore edge of the tray, and the passenger cross-legged behind him.

Shampong resembles the *eka*, but larger, and is usually employed for women.

Donga is in use in the Dekhan, and is a two-wheeled conveyance; one pony in shafts, and another pony outside.

Nibs is a palanquin on two wheels, drawn by bullocks.

The *Araba* of the Turks has its sides of lattice work to admit the air. The *Jutka* is similar to the *eka*. In India with the palanquin, etc., and in China and Japan with forms of the sedan chair, men have been employed as carriers from the most ancient times, but in India and China largely as bearers of burdens. The camel, the mule, the horse, the bullock, the buffalo, yak, and the donkey, have been employed in Egypt, Central and Southern Asia, from prehistoric times for riding, carriage, for burdens, and for ploughing. The hybrids between the female and male yak and the bull or cow carry from two to three maunds; they are sure-footed, hardy, and docile, and are used also for riding in the snows.

In the highest parts of the N.W. Himalaya, sheep and goats are most used. The sheep carry from 10 to 16 lbs., the goats from 12 to 24 lbs.; their day's journey is about five miles, to give them time to browse the pasture, which is their sole food. They are used to carry the borax from Tibet in packs (*karbaj*) slung over their backs.

During the march upon Kabul, Yakub Khan made over to the British transport service sixty-two magnificent hill ponies, capable of carrying four maunds each = 336 lbs. Camels rarely cover the ground at a greater speed than one and a half to two miles an hour, consequently in an enemy's country the troops must be continually halted in order not to leave their baggage in the rear unprotected. The men are thus, even over the shortest marches, kept under arms all day; and when anything over fifteen miles has to be done, the camp cannot be formed until darkness has set in. Mules or ponies keep up with the troops, and the line does not extend to so great a length. Even the longest marches can be performed in the earlier part of the day. The *kafilas* that come down every year to India in immense numbers, march for two days—perhaps at the rate of 20 to 30 miles—and halt for one good day's grazing. See Camel.

CARRION CROW, *Corvus corone* of Europe, Afghanistan, Japan (apud Temminck), is replaced in India by *C. culminatus*.

CAKRIVEMBU MARAM. TAM. Garuga pinnata, Roxb.

CARROT, *Daucus carota*.

Jazar, Istuffin, . . . ARAB.	Staphulinos, GR. of Dios.
Hu-lo-peh, . . . CHIN.	Gajur, . . . HIND.
Hung-lo-peh, . . . "	Carota, . . . IT.
Carotte, . . . FR.	Zirduk, . . . PERS.
Mohre, Gelbe, Kûbe, GER.	Zanahoria hortense, . SP.

The red and yellow carrots are cultivated all over India as a vegetable. The hispid fruit forms the basis of the vermillion pad used by the Chinese as their ordinary red pigment for stamping purposes. Its fruits are recommended in chronic diarrhoea.

CARRUWA PUTTAY. TAM. Cinnamon.

CARTER, HENRY JOHN, M.D., a medical officer of the Bombay army, a large contributor to current literature in the Tr. Med. Phys. Soc., Bombay, No. 8; Medical Gazette, 1839; Jour. Bomb. As. Soc. Ann. and Mag. He wrote on the Prevalence of Intermittent Fever among the troops at Hyderabad in Sind during the autumn of 1846; Beriberi among the Marines of the Indian Navy; Rupture of the Heart; Case of Poisoning by Opium, and Passage of Mud into the Bronchi in Drowning; Medical History of the

Central Schools of Bombay, 1852; *Dracunculus* in the Island of Bombay; Medico-legal Cases; Colours of the Tapetum depending on Structure, not Colouring Matter; Medical Anatomy of *Culex pipiens*, Common Mosquito; Animality of the Freshwater Sponge; Description of the Freshwater Sponges in the tanks of the Islands of Bombay; On the Red Colouring Matter of the Salt-pans in the Island of Bombay; On the Form and Structure of *Operculina Arabica*; *Zoosperms* in *Spongilla*; Development of *Gonida* (?) from the Cell-contents of the *Characeæ*, with Observations on the Circulatory Movement of the Mucus; On the Conjugation of Three Species of *Diatomeæ*, with Remarks on *Amphiphora*; Abstract of Notes on the Organization of the Freshwater Infusoria of the Island of Bombay; On the Development of the Root-cell and its Nucleus in *Chara verticillata*; Observations on the Alluvium, with Figures of Eocene Fossils about Hyderabad in Sind; Report on the Copper Ore and Lithographic Limestone on the S.E. Coast of Arabia; Geology of Muscat and of the S.E. Coast of Arabia; On the Organization of the Foraminifera and their Fossil Remains in the Poorbunder Limestone of Kattyawar, etc.; Geology of the Island of Bombay; Pleiocene Deposits on the Shores of the Arabian Sea; Descriptions of some of the Larger Forms of Fossil Foraminifera in Sind; Description of *Orbitolites Malabarica*; Structure of Fossil *Alveolina*; Notes on the Gurrat of the S.E. Coast of Arabia; On the Great Mahrah Tribe of ditto, with Vocabulary of their Language; Description of the Frankincense Tree of Arabia, with Remarks on the Misplacement of Ptolemy's *Sibanophorus* Region; Geography of the S.E. Coast of Arabia, Modern and Ancient; Description of the Ruins of El Bellad on the S.E. Coast of Arabia.—*Trans. Geog. Soc. Bomb.* vii. p. 225; *Jour. Royal Geog. Soc.* xvi. part ii. p. 187.

CARTHAGE was built B.C. 813 or 814. The Carthaginians were a Semitic race. Their descendants are supposed to be the Moors who occupy the north of Africa; lowlanders, traders, and dwellers in cities; little idle men who grow fat from indolence; avaricious, perfidious, cowardly, cringing, and insolent. See Semitic Races.

CARTHAMUS OXYACANTHA. *Bieb.*

Kantiari, Karar, . . . HIND. | Poli, Polian, . . . HIND.
Kandiara, . . . " | Khareza, . . . "

Abundant in many of the more arid tracts of the Panjab. The seeds are eaten parched, either alone or with wheat, or are ground and mixed with wheat flour for bread, as also are those of *C.* (or *Onobroma*) *Persicus*. The oil extracted from the seeds is burned in lamps, used in food, and medicinally.—*J. L. Stewart, M.D.*

CARTHAMUS TINCTORIUS. *Safflower.*

Crocus Indicus, Rumph.

Usfar, ARAB.	Kamalottara, . . . SANSK.
Kajireh, BENG.	Kusumbha,
Hao, BURM.	Sendurkum, . . . TAM.
Kortom, EGYPT.	Agnisikha, TEL.
Bastard saffron, . . . ENG.	Kusumba chettu, . . . "
Kusum, HIND.	

The safflower is grown very abundantly all over India, Burma, and China, and is very largely used in dyeing. The plant is propagated by seed sown in drills at 1½ feet distance from each other. The young plants appear in about a month, and after the second month are

hoed and thinned, each plant being left a foot from the other. The richer the land, the larger the proportion of colouring matter afforded by the flower. On the opening of the flowerets, they are rapidly gathered without being allowed to expand fully. They are then dried in the shade with great care. The produce of *Paterghanta* and *Belispor* is considered, in the London market, as the best that is exported from India. The *Dacca* safflower ranks next to that of China, which is reputed to be of a superior quality. Safflower is widely grown on the banks of the *Irawadi* and *Salwin*. Its flowers furnish the best yellow dye in the country, and, mixed with other ingredients, they are used to dye red, and to give a variety of tints, and in dyeing pink and scarlet.

This plant yields six or seven distinct shades of red, the palest pink or *piyazi gulabi* (pink), *gulabi surkh* (rose colour), *kulfi* or *gul-i-shaftalu* (deep-red). In combination with *harsinghar* flowers (*Nyctanthus arbor-tristis*), it yields *soneri* or golden orange, *narangi*, deep orange, and *sharhati*, salmon-colour; and with turmeric (*haldi*, *zard chob*), it gives a splendid scarlet, *gul-i-anar*, and other tints; again, if combined with indigo, Prussian blue, etc., a series of beautiful purples, known as *lajwardi*, *uda*, *nafarmani*, *sosani*, *kasni* (a delicate mauve), *falsai*, *kokai*, and the deep-purple *baingni*. All these tints are more or less beautiful, but scarcely one of them will stand washing.

The yellow principle is worthless as a dye. It is soluble in water, is removed by washing, and thrown away as the first step in the preparation of the valuable red product. The red dye is an acid resinous substance of superb colour, insoluble in water and in acid solutions, little soluble in alcohol, and not at all in ether. It is dissolved freely by aqueous alkaline solutions, which it neutralizes. Its salts (*carthamates*) are crystallizable, and quite colourless; acids precipitate the carthamic acids from solutions of these salts. To obtain it on a large scale, after the separation of the yellow matter, the dried flowers are treated by a solution of carbonate of soda, and lemon juice added; the carthamic acid precipitate is collected by subsidence, washed, and carefully dried at a gentle heat. The most lovely tints are imparted by this dye to silk and cotton; rouge is a mixture of the dry carthamic acid and finely powdered talc. The pink saucers used for giving a flesh tint to silk are prepared from this dye, with a small portion of soda. 8 oz. of the prepared petals and 2 oz. carbonate of soda are acted on by 2 gallons of water. 4 lbs. of prepared chalk are added, and the colour precipitated upon this by citric or tartaric acid. The Chinese *card-rouge* is a carthamate of soda, colourless when rubbed on, but by the salt being decomposed by the acetic acid secreted by the skin itself, the carthamic acid separates in the most perfect rosy tint which can be imagined. The seeds yield abundance of fixed oil, which is used as an external application in paralytic affections, and for bad ulcers; and small seeds are reckoned by the *Vytians* amongst their laxative medicines. The dye of the 'Kong-wha,' a variety of safflower or *Carthamus tinctorius* which grows in China, is held in high esteem by the Chinese, and is used in dyeing the red and scarlet silks and crapes which are so common in the country, and so much and

justly admired by foreigners of every nation. Large quantities are annually produced in the Che-kiang province near Ningpo.—*Powell's Handbook*, i. p. 457; *Ains. Mat. Ind.* p. 195; *O'Shaughnessy*, p. 411; *Drs. Mason, M'Clelland*.

CARTICA or Kartika, in Hindu astronomy the seventh Hindu solar month, when the sun is in the sign Tula, answering to the Tamil Arpesi. In the southern parts of the Peninsula the Tamil month Cartica is the eighth of the solar year. Lastly, Cartica is also the eighth lunar month of the luni-solar year. This month is peculiarly sacred to Lakshmi, the goddess of prosperity, the Juno Moneta of the Romans. The 13th is called the Dhunterus, or thirteenth day of wealth, when gold and silver coin are worshipped, as the representatives of the goddess, by her votaries of all classes, but especially by the mercantile classes. On the 14th all anoint with oil, and make libations thereof to Yama, the judge of departed spirits. Worship (puja) is performed to the lamp, which represents the god of the lower regions, and is thence called Yamadipa, the lamp of Yama; and on this day partial illuminations take place.—*Tod; Warren; Kala Sanhita; Cole, Myth. Hind.* p. 379.

CARUM CARUI. *Linn. Caraway.*

<i>C. gracile</i> , <i>Bth.</i>	<i>C. nigrum</i> , <i>Royle.</i>
Curwiya, ARAB.	| Gyunun, <i>HIND.</i> of <i>LAD.</i>
Carvi, FR. <i>It.</i>	| Umbu, " <i>PANJ.</i>
Jira siyah, <i>HIND.</i>	|

Carum carui and *C. gracile*, if distinct, both grow in profusion in many of the more arid tracts on the Sutlej, Chenab, etc., in Kashmir, and in Western Tibet, from 9000 to 14,500 feet.—*Dr. J. L. Stewart.*

CARVING.

Sculpture, gravure, . . FR.	| Scultore, <i>It.</i>
Schnitzen, Vorschneiden, . . GER.	| Escultura, <i>Sp.</i>

Carving in wood, horn, and ivory must have been practised in India from very early times, for the idols which the people worship, and for calico-printing, for which they have long used wood-blocks. They are fond of carving on many of their ordinary utensils, as spinning-wheels, etc. Their skill is shown in carving the blackwood and ebony furnitures of Bombay and Madras, especially in the elegance of the patterns of the backs of the chairs and sofas, in the sideboards and book-cases. Carvings in ivory of different parts of India are much to be admired, whether for the size or the minuteness, for the elaborateness of detail, or for the truth of representation. Among these the ivory carvings of Berhampore are conspicuous. A set of chessmen from India, at the Exhibition of 1851, carved from the drawings in Layard's 'Nineveh,' were excellent representations of what could only have been seen in the above work, and showed that they are capable of doing new things when required; their representations of an elephant and other animals were true to nature. The carvings in the same material in a state chair sent from Travancore were greatly admired; and for the truth of representation on a minute scale, where an elephant was enclosed in the shell of a pea, chouries or fly-flappers from Calicut, where the ivory or sandal-wood was cut into long hair-like threads, were also specimens of their mechanical skill. Their skill in wood-carving

is conspicuously displayed in the elaborate details of the sandal-wood boxes from the Malabar coast, and is also shown in the beauty of the figures and buildings in the pith-like stems of the marsh-plant called shola, the *Æschynomene aspera*. In the latter, all the elaborate detail of the richly ornamented Hindu architecture of the south of India is carefully brought out. For this work only two tools seem to be employed,—one a large and heavy knife, and one with a fine sharp cutting edge. Besides these, cocoanut shells and gourds are carved and made into cups, vases, and snuff-boxes; also the kernel of the cocoanut is variously cut, for making garlands for state occasions. The natives of India also display skill and neatness, as well as habitual taste, in their work-boxes, etc., of ivory, horn, or porcupine-quill, ebony, and sandal-wood, their fans and umbrellas, chouries, and khus-khus or other baskets, hookah-snakes, imitation fruits and flowers, toys and puzzles. The skill is remarkable with which the unyielding substance of the hard, thick chank shell is converted into necklaces for men and into bracelets for women. The manufacture of shell bracelets is one of the indigenous arts of Bengal, in which the Sankari caste at Dacca excel. The chanks of which they are made are the large species of *Turbinella*, from six to seven inches long, and of a pure white colour. They are imported into Calcutta from Ramnad and South India, opposite to Ceylon, and from the Maldivé Islands. The ivory for the Chinese carvers reaches China principally from Cochin-China and Africa, via Bombay, and always finds a ready sale at Canton; the largest and best tusks weigh from 16 to 25 pounds each, decreasing to five or six pounds. The cuttings and fragments also form an article of trade, as the workmen can employ the smallest pieces. Bones and horns, especially the long horns of buffaloes, are in China worked into handles, buttons, etc. Rhinoceros' horns are brought from Burma, from Sumatra, and from Africa through Bombay; they are highly valued by the Chinese, from a notion that cups made from them sweat whenever a poisonous mixture is poured into them. A perfect horn sometimes sells as high as 300 dollars; but those that come from Africa do not usually rate above 30 or 40 dollars each. The principal use of these horns is in medicine and for amulets, for only one good cup can be carved from the end of each horn; and consequently the parings and fragments are all preserved. The hard teeth of the walrus, lamantin, and other cetaceous animals, also form articles of import into China from the Pacific, under the designation of sea-horse teeth; they weigh one or two pounds a piece, and the ivory is nearly as compact, though not so white, as that of the elephant. The delicate carving of Chinese workmen is well known, and has often been described; many specimens of it are annually sent abroad. Few products of their skill are more remarkable than the balls, containing ten or twelve spheres cut out one within another; but the manner of cutting them is simple. A piece of ivory or wood is first made perfectly globular, and then several conical holes are bored into it in such a manner that their apices all meet at the centre, which is usually hollowed out an inch or less after the holes are bored. A long crooked tool is then inserted in one of the conical holes, so

bent at the end and stoppered on the shaft that it cuts the ivory at the same distance from the surface when its edge is applied to the insides of the cone. By successively cutting a little on the insides of each conical hole, their incisures meet, and a sphericle is at last detached, which is now turned over and its faces one after another brought opposite the largest hole and firmly secured by wedges in the other holes, while its surfaces are smoothed and carved. When the central sphere is done, a similar knife, somewhat larger, is again introduced into the holes, and another sphere detached and smoothed in the same way, and then another, until the whole are completed, each being polished and carved before the next outer one is commenced. It has been supposed by some that these curious toys were made of hemispheres nicely luted together, and they have been boiled in oil for hours in order to separate them and solve the mystery of their construction. Fans and card-cases are carved of wood, ivory, and mother-of-pearl in alto-relievo, with an elaborateness which shows the great skill and patience of the workman, and at the same time his bad taste in drawing, the figures, houses, trees, and other objects being grouped in violation of all propriety and perspective. Beautiful ornaments are made by carving roots of plants, branches, gnarled knots, etc., into fantastic groups of birds or animals, the artist taking advantage of the natural form of his materials. Models of pagodas, boats, and houses are also entirely constructed of ivory, even to representing the ornamental roofs, the men working at the oar, and women looking from the balconies. Baskets of elegant shape are woven from ivory splinths; and the shopmen at Canton exhibit a variety of seals, paper-knives, chessmen, counters, combs, etc., exceeding in finish and delicacy the same kind of work found anywhere else in the world. The most elaborate coat of arms, or complicated cypher, will also be imitated by these skilful carvers. The national taste prefers this style of carving on plane surfaces; it is seen on the walls of houses and granite slabs of fences, the woodwork of boats and shops, and on articles of furniture. Some of it is pretty; but the disproportion and cramped position of the figures detract from its beauty. Their porcelain is good. The ivory carvings, ebony and other hardwood ornaments, and the bronzes, are all exquisitely worked; the value attached to them in England varying from £4 to £5. Burmese carpenters carve in a rough but bold style, and find employment principally in carving for the exteriors of monasteries.—*Williams' Middle Kingdom*, ii. pp. 141, 408; *Yule's Embassy*, p. 59; *Hodgson's Nagasaki*.

CARWAR or Sedashigarh, a sheltered seaport on the western coast of the Peninsula of India.

CARYOCAR BUTYROSUM.

O. nuciferum. | *Pekoa butyrosa.*

The souaria, sawarow, or surwha tree of Guiana and Demerara. It yields the sawarow nut. It might be brought to India with benefit to the country.

CARYODAPHNE DENSIFLORA. *Blume*. Kiteja of JAVA. A tree sixty to eighty feet high; leaves gratefully aromatic, used in infusion like tea against spasms of the bowels, and in puerperal convulsions.—*O'Shaughnessy*, p. 547.

CARYOPHYLLUS AROMATICUS. Linn.

Eugenia caryophyllata, Thunb.

Karanfal,	ARAB.	Bunga-lawang, . .	MAHR.
La-nyen-Pwen, . . .	BURM.	Bunga-chanke, . .	MALAY.
Tkeng-hia,	CHIN.	Gaumedii,	MOLUCCAS.
Ting-hiang,		Mykek,	PERM.
Clove tree, Cloves, .	ENG.	Lavanga,	SANSK.
Clou de girofle, . . .	FR.	Krabu gaha, . . .	SINGH.
Kurphullon,	GR.	Warrala,	
Long, Lavang,	HIND.	Lavangam,	TAM., TEL.

Unexpanded Flower-buds.

Mother Cloves; Cloves.

Dried Berries.

Clous de girofle, FR.

This small tree of the Moluccas grows in Amboyna and Ternate, but is cultivated in the Malay Peninsula, the south of India, Mauritius, Bourbon, Cayenne. It is an elegant evergreen about 18 ft. high, and has a smooth grey bark. The best cloves are obtained from the Moluccas; they are unexpanded flower-buds, and three pounds weight of cloves contain about 5000 flowers. They are used as a spice, and the valuable oil obtained by distilling them is used in medicine.—*Royle; O'Shaughnessy; Voigt.*

CARYOTA HORRIDA. Gardn., Moon's Cat.

Areca horrida, Thun., Hooker. Katu kittul, SINGH.

A tree of Caraccas, introduced into Ceylon and into the Calcutta Gardens. In Ceylon it often rises to a height of fifty feet, and has a coating of thorns for about six or eight feet from the ground, each about an inch in length, and so densely covering the stem, that the bark is barely visible.—*Voigt; Thwaites.*

CARYOTA URENS. Linn. Malabar sago

palm.

Ban khajur,	BENG.	Nibong,	MALAY.
Ramgnoah?	"	Shunda pana, . .	MALEAL.
Burra flawan?	"	Nepera, Kittul, .	SINGH.
Yels kae?	CAN.	Ootali panna, . .	TAM.
Bhyni, Mear?	"	Konda panna, . .	"
Ghat palm,	ENG.	Erim-pannah, . .	"
Bastard sago palm, . .	"	Chirugu,	TEL.
Jagari palm,	"	Konda jiligu, . .	"
Ram-guoah?	HIND.	Jirugu,	"
Berli,	MAHR.	Salopa,	URIA.

This very ornamental palm grows in Ceylon and in Malabar, Canara, Sunda, on the Godavery, in Ganjam, Gumsur, Assam, Sumatra, and Borneo. It grows to a height of forty feet, with a ringed, tall, and slender stem of more than a foot in diameter. It is found on the sea-shore, and ascends the mountains of Sikkim to the height of 5000 feet. Its outer wood (outside the pith) is nearly as hard as flint. Where it grows in abundance, it is one of the most useful of trees. The root is hollowed for the buckets used in irrigation; and the trunk, when hollowed, by freeing it from the inner pith, forms a convenient and economical water conduit. In Ceylon, Sumatra, and Borneo, it is used for rafters, reapers, window bars, posts, etc., but is little durable, rarely lasting above three or four years. Its pith or farinaceous part is filled with starch granules equal to the best sago, which are extracted by the people, and made into bread or pottage. Its spathes yield a toddy or palm wine, Koondel panai kallu, TAM.; and during the hot season a single tree will yield at the rate of a hundred pints in the 24 hours. This is used as an intoxicating liquor, also as yeast in baking bread, and is converted into the spirit called Bhyni arrack, and into sugar or the jagari called Koondel panai vellum, TAM. Its cabbage is preferred to that of the cocoanut. Its leaves are very large, measur-

ing 18 or 20 feet in length, and from 10 to 12 across; from their fibre, the kittul fibre of commerce, ropes of great strength, brushes, brooms, caps, and similar articles are manufactured; the woolly material found on the petioles is used as oakum for caulking ships. In Ceylon the black fibre from the leaf-stalks is manufactured into rope of great strength and durability, and is used for tying wild elephants. The Rodynas, a forest race among the Kandians, make this rope generally with considerable skill. The fibre is much used by the natives for making fishing lines and bowstrings; is very strong, and resists water for some time, but is liable to snap if suddenly bent or knotted. It resembles black horse-hair, and might be employed similarly. Dr. Gibson says it is one of the most useful trees in the country; and he had heard that the farm of this tree, throughout the single district of Yellapore in Soopah, yielded Rs. 30,000 per annum.—*Drs. Wight, Gibson, Roxb., Royle, Hooker, Marsden, and Ainslie; Mr. Mendis; Captain Macdonald; M. E. J. R.; Seeman; Mr. Low; Mr. Oudatjee, Veg. Prod. of Ceylon.*

CAS. HIND. *Saccharum spontaneum*.

CASA-CASA. TAM., TEL. Poppy seed.

CASA CHITTY, of Ceylon, author of the Tamil Plutarch, containing a history of the lives of the poets of Southern India in a chronological arrangement.

CASA-ELLE. TAM. Leaves of *Meinecydon tinctorium*.

CASANDI. HIND. *Cassia sophora*.

CASARA-KAIA. TEL. *Cucumis tuberosus*; *C. canabina*.

CASARCA, a genus of swimming birds of India; there are several species. In *C. cana*, *Gm.*, the under tail-coverts are paler, and the black on either side of them at base of *C. rutila*, is, in *C. cana*, replaced by dusky, minutely freckled with whitish. *C. rutila*, the Brahmany goose, is met with above Sukkur. The male is a fine-looking bird, and measures about 29 inches; the general colour of the plumage is rufous, with brilliant green on the wing-coverts. It is shy and wary. See Chakwa.

CASEARIA CANZIALA. Wall.

Samyda canzuala, Buch. | *Ana vinga*, . . MALEAL.

A large tree growing in Assam and Bengal, very bitter. Its leaves are used in baths, and the pulp of its fruit as a diuretic. The *Casearia* genus is of the order *Samydaceæ*. The species are found in the Himalaya, S. India, Assam, Ceylon, Penang. Voigt (p. 78) mentions six species, shrubs or small trees of N. India; and Thwaites mentions two moderate-sized trees of Ceylon,—*C. coriacea* and *C. championi*.

Casearia pentandra, tha-byai-ywet-kya, BURMESE, found in the Pegu district, but scarce. Timber strong and close-grained, adapted for fancy work and cabinetmaking.—*Dr. McClelland.*

Casearia tomentosa, *Roxb., D. C.*, chilah, chilla, HINDUSTANI, a small tree of Kangra, the Panjab, Jaffna, and Sigre. It is not uncommon in the Siwalik region at from 2000 to 3000 feet, up to near the Indus. The timber is whitish, soft, and brittle, and is only used for small woodwork by natives; but is said to furnish good fuel. In some places the fruit is used for poisoning fish.

Casearia elliptica, bhogara, MAHR, klaare maram, TAM., in Coimbatore, a large shrub. On

the Bombay side it is a small tree, not uncommon near the ghats. The wood is smooth, fine-grained, and yellow-coloured, but from its small size can only serve as an ornamental wood.—*Drs. Wight, J. L. Stewart, and Gibson.*

Casearia esculenta. *Roxb.*

Jiru kaneli, . . MALEAL. | Konda pragara, . . TEL.
Konda junguru, . . TEL.

A large shrub, growing in the mountains of the Northern Circars. Its leaves are eaten by the people, and its roots are employed by the hill people as a purgative.—*Useful Plants.*

Casearia ovata, *Roxb.*, Peda-kal-mesura, TELUGU, is a large tree of the Godavery; has wood of a light colour, hard, does not warp, and is worthy of attention. Fruit used to poison fish.—*Captains Beddome, Macdonald.*

Casearia varians. *Thw.*

C. coriacea, *Thw.* | *C. championi*, *Thw.*

This is a lofty tree, very common in all the Western Ghat forests and in Ceylon, and it grows to a very large size in the dense moist forests at 2000 to 3000 feet elevation. *C. coriacea*, *Thw.*, a form with very coriaceous leaves, is very common on the higher ranges of the Anaimally, 6000 to 7000 feet elevation, and on the Ceylon mountains at the higher altitudes. In drying, the leaves turn very black on the upper side.—*Thwaites*, p. 19; *Beddome, Fl. Sylve.* part xviii. p. 208.

Casearia Zeylanica. *Thw.*

C. ovata, *Willd.* | Wal-wareka, . . SINGH.
A middle-sized tree of the hotter parts of Ceylon, very common up to an elevation of 1500 feet.—*Thw. En. Pl. Ceylon.*

CASGAI, a wandering tribe in the south of Persia, between Shiraz and Darab.

CASH or Kas, in the old Madras currency, a small coin of which 10 = 1 doodie, now valued as 2 pice, and 80 cash going to a fanam; 45 fanams being equal to 1 star pagoda. According to the old Madras system, accounts were kept in star pagodas, fanams, and kas.

8 kas = 1 fanam

336 „ = 42 (silver) fanams = 1 pagoda.

The E.I. Company reckoned 12 fanams to the rupee, and three and a half rupees to the pagoda. But the bazar exchange fluctuated between 35 and 45 silver fanams per pagoda; fanams were also coined in a base gold.

Copper 1, 5, 10, and 20 kas pieces were coined in England, by contract, for Madras, so lately as 1797. The 20 kas was also called 'dodo' and falus. The star pagoda weighed 52.56 grains, and was nineteen one-fifth carats fine. It was therefore intrinsically worth 7s. 5½d. sterling, but it was commonly valued at 8s. Many varieties of the pagoda used to circulate on the Coromandel coast, but since 1833 they have been only obtainable when sought for.

In 1811 a coinage from Spanish dollars took place, consisting of double rupees, rupees, halves, and quarters; and pieces one, two, three and five fanams; the rupee weighed 186.7 grains. A silver coinage of half and quarter pagodas, of dollar fineness, also then took place; the half pagoda weighed 326.73 grains troy, and was equal to 1½ arcot rupees. By a proclamation of 7th January 1818, the silver rupee of 180 grains was constituted the standard coin, and all accounts and public engagements were ordered to be converted at the exchange of 350 rupees per 100 pagodas.

The proportion between the old and new currency then became $\frac{3}{4}$ rupees per pagoda, and in copper 75 kas old currency equals 14 paisa new currency.

Kas may be a corruption of the Sanskrit word Karsha, which is mentioned in Colebrooke's Essay on Indian Weights, as the same with the word pan. A karsha, or 80 raktika (rati) of copper, is called a pana or karsha-pana. It is now the eightieth part of a pan; but the simple word is all that can be identified as having survived the changes of system.

In Britain, 'cash' has come to mean ready money, also copper or silver money. In India it is still, along with the cowrie, used to indicate a small sum.

CASH. CHIN. A Chinese coin about eight to a halfpenny. In 1872, 1700 cash were exchanged for a tael of silver, and nearly four tael go to a pound sterling. In China, a cash of iron is the 5320th part of a dollar, and it is a saying, 'For as many beads make the necklace, so many cash make a cobang,' a gold coin equal to four dollars and a third.—*Edken*.

CASH, the ancestors of the Chasdim or Chalybes of the mountainous territory in Central Armenia, a little to the north of Erzerum. The Sabæan followers of Cash are to be distinguished from those descendants of Shem who at a later period occupied part of the mountains of Assyria. See Chaldaea.

CASH BALANCES, a financial term of the Government of India for the balances in their several treasuries. They have ranged between thirteen and twenty-four krór of rupees in the years 1857 to 1880; but anything below thirteen krór is considered unsafe.

CASHCUTTEE. — ? Gambier.

CASHEF or Kasheb, of the Mahomedans of Kashmir, the grandfather of Kasyapa, who drained the valley. See Kashmir.

CASHEW NUT TREE, *Anacardium occidentale*, yields several useful products. One edible part is the swollen, pear-shaped stalk (peduncle) which supports the nut. The kernel also is eatable when roasted.

Cashew Apple Oil is powerfully vesicating; and it is obtained from the pericarp of the cashew apple. It resembles in its properties the acrid oil obtained from the marking nut, *Semecarpus anacardium*.

Cashew Gum. The trunk and branches, on being wounded during the ascent of the sap, yield a transparent gum similar in appearance to gum-arabic, for which it is a good substitute. This gum is sub-astringent, and is particularly adapted for use where the depredations of insects require to be guarded against.

Cashew Nut.

Hidjili badam, . . .	BENG.	Jambu-monat, . . .	MAL.
Catsjoenooten, . . .	DUT.	Nozes d'acaju, . . .	PORT.
Noix d'acajou, . . .	FR.	Nueces d'acaju, . . .	SP.
Akajunusse, . . .	GER.	Mundri Kotte, . . .	TAM.
Caju, . . .	GUJ., HIND.	Munta mamidi vittu, TEL.	
Acaju, . . .	IT.		

Cashew nuts are kidney-shaped, attached to the under part of the fruit; they are articles of food, and an ingredient in chocolate.

Cashew Nut Oil.

Kaju ka tel, . . .	HIND.	Munta mamidi nuna, TEL.
Mundri cottayennai, TAM.		

A light yellow, sweet-tasted, and edible oil obtained from the nut of this tree by roasting. It

is in every respect equal, if not indeed superior, to either olive or almond oil. It is very seldom prepared, the nuts being used as a table fruit.—*M. E. J. R.* See Gum; Oil; Resin.

CASHGAR, Khoten, Turfan, and Yarkand, according to Lassen, the old original inhabitants of these places, and of the adjacent highlands, are the Tajak, who speak Persian, and are all agriculturists. The Swedish chronicles bring the Swedes from Cashgar, and the affinity between the Saxon language and Kapchak is great.—*Bunsen; Tod.* See Kashgar.

CASHMERE. The Cashmere territory at present comprehends Jammu, Cashmere, Kishtwar, Zangskar, Ladakh, and Balti. A chronicle exists which was composed in A.D. 1125, but gives a general historical account of Cashmere from B.C. 1182. The Abissares chief, who with rich presents conciliated Alexander as he approached the Indus, is supposed to have ruled about Cashmere. The rajas of Cashmere of the line of Kuru in the Lunar race, were worshippers of the Naga or Snake. The early chronology of Cashmere is full of doubts, though Professor Wilson, Captain Troyer, and Major Cunningham all coincide in regard to the proper period of the initial date of the Naga dynasty. The line is taken from the raja Tarangini, which commences with an account of the desecration of the valley by Kasyapa muni, supposed to allude to the Deluge. Cashmere was colonized by Kasyapa B.C. 2666. There were many dynasties of Cashmere—kings of the Kaurava race, 1266 years, with one of whom, Gonerda, authentic history commenced in B.C. 2448. Lava, in 1709 B.C., was the Loo of Mahomedan historians.

Surendra, B.C. 1600, was contemporary of Bahman of Persia.

The Gonerdiya dynasty, 1013 years, or 378 years after adjustment.

The Aditya dynasty, 192 years.

The Gonerdiya line restored, 592 years, or 433 adjusted.

The Naga or Karkota dynasty, 260 years 5 months.

The Utpal dynasty, 84 years 5 months.

The Bhota dynasty.

The Mahomedan kings.

Cashmere was annexed to the Moghul empire under Akbar in 1586 A.D., but it has since been ruled from Afghanistan by the Durani and Barakzai chiefs; was taken from them in 1819 by Ranjit Singh, and is now held by a Dogra Rajput, chief of Jammu. After the Sutlej campaign, the treaty of Lahore, dated 9th March 1846, left the British Government in possession of the country, hill and plain, between the rivers Beas and Sutlej, and of the hill country between the Beas and the Indus, including the provinces of Cashmere and Hazara. The British Government conferred on raja Gulab Singh, territories on the hills, and recognised his independence. Gulab Singh began life as a horseman in a troop commanded by jemadar Khooshal Singh, then the favourite chamberlain of Ranjit Singh. He soon raised himself to an independent command, in which he distinguished himself by making prisoner Agur Khan, chief of Rajauri. For this service the principality of Jammu was conferred on his family, and Gulab Singh took up his residence in Jammu, whence he soon extended his authority over his Rajput neighbours, and eventually into Ladakh. He took an important part in the negotiations which followed the battle of Sobraon. A

separate treaty (No. cxxiv.) was concluded with him at Amritsar on 16th March 1846, which put him in possession of all the hill country and its dependencies between the Indus and the Ravi, including Chamba, and excluding Lahoul, on payment of 75 lakhs of rupees, and in exchange for the Cis-Ravi portion of Chamba. By a subsequent arrangement in 1847, Chamba came again entirely under the British Government. In 1857, maharaja Gulab Singh died, and was succeeded by his son, Runbir Singh, to whom the right of adoption was guaranteed to the maharaja by a sunnud.

The general level of the valley of Cashmere is about 5500 feet above the sea, but at the Waler lake and gardens of Srinuggur is only 5146 feet, in lat. $34^{\circ} 46'$ and long. $74^{\circ} 48'$.

Cashmere has always been subject to earthquakes. The great bulk of the people profess Mahomedanism; but they are of Aryan descent, of the Hindu stock, and all classes are remarkable for their physical symmetry. The chief town, Srinuggur, on both banks of the Jhelum, has 40,000 people. Islamabad, on the Jhelum, is a seat of the shawl manufacture. The fruits which attain maturity are the apple, pear, quince, peach, apricot, plum, almond, pomegranate, mulberry, walnut, hazel nut, pistachio, and melon. The 'gilas' cherry is indigenous, and is cultivated in orchards. The bullace, *Prunus insititia*, is found nowhere else in a wild state. The vine is extensively cultivated. In 1878-79 the British Indian trade with Cashmere amounted to Rs. 81,61,169, viz. imports, Rs. 55,85,369, and exports, Rs. 25,75,800. — *Elphin. Caubul*, p. 506; *Prinsep's Antiquities*, by Thomas; *Cleghorn, Panjab Report*, p. 171; *Aitchison's Treatise*, etc.

CASHMERE, a very beautiful woollen fabric, formerly manufactured solely in the kingdom of Cashmere, but now in other towns, in the form of shawls, coats, scarfs. The manufacture of Cashmere shawls was long peculiar to that province. Formerly the shawls were exquisitely woven, with unrivalled elegance and chasteness of design, softness and finish in quality, arrangement of colours and use of dyes, which the finest Paisley and French shawls did not approach. The exquisite shawls of Cashmere become rarer and rarer every year, and their place has been usurped by hand-embroidered fabrics of lower value, with more showy and more vulgar patterns. In the Panjab and in Dehli, of late years, workmen have commenced to embroider Cashmere cloths and net with floss silk and braid, but solely for sale to Europeans, who wear them as tunics, jackets, scarfs, and the like. In the hand-worked Cashmere shawls, as also in the Dehli work, wooden needles of hard wood are used, slightly charred, with a hole in the centre of the needle to receive the yarn. Cashmere weavers have settled at Amritsar and Jellalpur and other places, and have flourished. The great Panjab mart for Cashmere is Amritsar. The largest import is of pashmina goods, consisting of shawls, needle-worked goods (amilkar), embroidered chogas, etc., and plain pashmina cloth. — *M. E. J. R.*; *Dr. Watson. See Shawls*; Wool.

CASI, the Hindu name of Benares, a city which lies in $25^{\circ} 18' 31''$ of N. lat., and according to Hindu geography, $4^{\circ} 37'$ E. of Lanca. See Benares.

CASPIAN SEA, a large salt-water inland sea of Central Asia, lying between lat. $36^{\circ} 55'$ and $47^{\circ} 30' N.$, and long. $46^{\circ} 48'$ and $55^{\circ} 25' E.$, 730 miles long, 150 to 270 miles broad, with an area of 140,000 square miles. The chief affluents are the Atrak, Gurgan, Kizil-Ozan, Kuma, Kur-Terek, Ural, and Volga; but there are nearly a hundred torrents besides. It has no outlets and no tides. It has valuable fisheries of sturgeon and other large fish; sterlet, porpoise, perch. It has twice been surveyed, and once declared to be 81.4 feet below the Black Sea, but at another time only 38½ feet. It is known to the Mahomedans as the Daria-i-Kulzum, also Daria-i-Haslet Khan, and Daria Khizr, and by the Armenians as the Suf, by the Georgians Sgwa, and by the Russians Gualenskoi. According to Strabo (lib. xi.), all the tribes east of the Caspian were called Scythic. The Dahæ were next the sea; the Massa-gætæ and Sacæ more eastward; but every tribe had a particular name. All were nomadic; but of these nomades the best known are the Asi, the Pasiiani, Tachari, Saccarandi, who took Bactria from the Greeks. The Sacæ made irruptions in Asia, similar to those of the Cimmerians, and possessed themselves of Bactria and the best district of Armenia, called after them Sacasænæ.

The whole of the N. part of the barren highlands on the E. coast is inhabited by Kirghiz Kazzaks, that to the S. by the Turkoman and Khivah, all of them in tents, carrying on the coasting trade. About 80 ships, called shootes (Razchiva, Aslam), trade from port to port. The waters give employment to about 10,000 fishermen; yield abundance of fish, classed as *red fish*, which includes the beluga, sevringa, and sturgeon, yielding isinglass, and made into caviare; *white fish*, such as the salmon trout, bastard beluga, sterlet, carp or sazan, soudak, and silure; the *third class* have the general names chistia and riba or kooaya. The sturgeon fishery alone yields 2,000,000 roubles annually. The take in 1828 was 43,033 sturgeons, 653,161 sevringa, 23,069 beluga, also 8335 soudak, and 98,584 seals. Canals connect this sea with the Baltic.

The first attempt to open a trade route from the Caspian eastward was made by Antony Jenkinson, Queen Elizabeth's envoy to Shah Tamasp of Persia. In 1557 he travelled through Russia to Bokhara, returning by the Caspian and the Volga in 1560. From the king of Shirvan he obtained leave to establish a factory at that place. In 1579 Christopher Burroughs traded in a ship of his own building across the Caspian to Baku, but the ship got stranded in the ice, and his cargo of raw silk was carried in a boat to Astracan. After 160 years, in 1738, Mr. John Elton, who had been employed by the Russians on the Orenburg frontier, sailed from Astracan with a cargo of goods for the Persian market. He reached Euzeli, the port of Resht, in May 1739, and, proceeding to Resht itself, exchanged his English broadcloth for raw silk. He got leave to trade in Persia, and to plant a factory at Meshed, with a branch at Resht. Returning to Persia with a large cargo of broadcloth, he entered the service of Nadir Shah, and undertook to build for him a fleet capable of protecting the Persian shores of the Caspian. The *Averse*, carrying twenty three-pounders, was the first-fruits of Elton's energy and resourcefulness. But Russian jealousy brought

the new-born English trade in the Caspian to an untimely end in 1746. Two English vessels had to be sold at a great loss to Russian merchants in Astracan, and soon afterwards Elton himself was murdered in Ghilan during the anarchy which followed on the death of Nadir Shah in 1747. Among those who had embarked in the Caspian trade, was Jonas Hanway, who fell on one occasion into the hands of the Kajar chief, Muhammad Hussain, ancestor of the present Shah of Persia. He escaped with the loss of his property in Astrabad, and obtained from Nadir Shah an order for the payment of all his losses. But Hanway soon went home, to write a charming account of his travels and a life of Nadir Shah. By the treaty of Gulistan between Russia and Persia in 1813, no Persian man-of-war was thenceforth allowed to navigate the Caspian.

CASSA-CASSA. TEL. Poppy-seed.

CASSAREEP, the concentrated juice of the bitter cassava, forms the basis of the West India dish pepper-pot. Meat placed in it is preserved longer than by any other process of cooking.

CASSAVA. The sweet cassava is *Manihot aipi*, *Pohl*. The bitter cassava, or tapioca plant, is *M. utilisima*, *Pohl*.

Cassava flour or meal, from which Cassava bread is made, is obtained from the *M. aipi*, the sweet Cassava, the *Jatropha manihot*, *Linn.*, by grating the root, expressing the juice by pressure, and then drying the residual cake and pounding. It is called Moussache by the French.

Cassava starch, called also Tapioca, is prepared from the starch of *M. utilisima*, the bitter Cassava, by washing and granulating on hot plates, by which the concretions are formed, as seen in commerce.—*Hogg; Birdwood; Von Mueller*.

CASSAWA OIL of Moulmein. Out of this oil dammer is made, and a kind of torch, used by the poor classes instead of a lamp.—*Local Committee*.

CASSIA, a genus of plants belonging to the natural order Fabaceæ of Lindley; 24 species belong to the East Indies, and 35 have been grown near Calcutta. Important products are obtained from species of this genus. Dr. Royle was unable to distinguish the three kinds of senna from *C. elongata*, *C. lanceolata*, and *C. acutifolia*, and these were all included by him in his *C. officinalis*.

CASSIA ABSUS. *Linn.*

Senna absus, *Roxb. Fl. Ind.*

Hub-us-Soudan, . . . ARAB.	Chusmigah, . . . PERS.
Kushmi zerk, . . . " "	Choun, . . . SIND.
Chychim, . . . EGYPT.	Avarai pattai, . . . TAM.
Akakalis, . . . GR.	Chukuddi patta, . . . TEL.
Chaksoo (seed), . . . HIND.	Bu-tora, . . . SING.
Chusmak, . . . PERS.	

This small biennial or triennial shrub is extremely common; the powdered seeds are used as an application in cases of chronic ophthalmia.—*Royle*.

CASSIA ACUTIFOLIA. *Delille, Esen., Eberm.*

C. lanceolata, *Forak.*

Bombay senna. | *Suna mukhi*, . . . HIND.

This grows in Arabia and N. Africa. Dr. Royle remarks that *C. elongata*, *C. lanceolata*, and this plant seen the same. Dr. O'Shaughnessy observes that this species furnishes the bulk of the senna consumed for medicinal purposes in Europe, and called Tinnevely and Alexandrian. It is much adulterated with the leaves of *Cynanchum argel*, *Tephrosia apollinea*, and *Coriaria myrtifolia*.

CASSIA ALATA. *Linn, W. and A., W. I.*

Senna alata, *Roxb., Royle.* | *C. herpetica*, *Jacq.*
C. bracteata, *Linn.*

Sin bo me-dza-li, . . . BURM.	G'ling-gang, . . . MALAY.
Mai za lee gye, . . . " "	Pako g'ling-gang, . . . " "
Velaity agati, . . . DUK.	Dwipagustia, . . . SANSK.
Ringworm shrub, . . . ENG.	Simi agati, . . . TAM.
Winged cassia, . . . " "	Sima avisi, . . . TEL.
Dáo mardan, . . . HIND.	Metta tamara, . . . " "

It is a stunted shrub, pretty only when in gaudy yellow flower. The fresh leaves, bruised and mixed with lime-juice, are valuable in ringworm. The fresh leaves, bruised and rubbed upon the eruption, in many cases remove it. The whole plant is used by the Tamils as a remedy in venereal, in poisoned bites, and as a general tonic. An ointment prepared from its fresh leaves is almost a specific in ringworm.—*Beng. Phar.*

CASSIA ANGUSTIFOLIA, *Vahl.*, of N. Africa and S.W. Asia, perennial, but also cultivated. Yields the Mecca, the Bombay, and some of the Tinnevely senna.—*Mueller*.

CASSIA AURICULATA. *L., Roxb., W. and A.*

Senna auriculata, *Roxb.*

Tangayree, . . . CAN.	Talopodo, . . . SANSK.
Matura tea tree, . . . ENG.??	Ranna wara, . . . SINGH.
Tarwar, . . . HIND.	Avarai maram, . . . TAM.
Mayhari, . . . SANSK.	Tangedu chettu, . . . TEL.

Grows abundantly in the sterile tracts of the Madras Presidency, and in all parts of the Dekhan. In China the bark is used for tanning, and the stems to make native tooth-brushes; with the bark a soft and durable leather may be turned out. It is perhaps the best of the indigenous astringents of Southern India for this purpose. All parts of the plant have much astringency, and seem to possess no other property. In the south of Ceylon its leaves are infused as a substitute for tea. In China it is eaten as a vegetable. Its twigs are held in the hand, or applied to the head, for the coolness they impart.—*O'Sh. p. 309*.

CASSIA BERRIES, or Dalchini berries, are produced in the Nuggur districts of Mysore from the same plant as the cassia buds. The berries are an article of trade in the Nuggur division of Mysore.—*Dr. J. Kirkpatrick; Rohde, MSS.*

CASSIA BICAPSULARIS. *Linn.*

Senna bicapsularis, *Roxb.* | Six-leaved cassia, . . . ENG.

A shrub of the West Indies and South America, domesticated in India.

CASSIA BUDS.

Kwei-taze, . . . CHIN.	Flos lauri cassiae, . . . LAT.
Kasielblumen, . . . DUT.	Flores de cassia, . . . PORT.
Nagkessur, . . . GUJ.	Sirnaga-pu, . . . TAM.
Tejput-ka-phul, . . . HIND.	Nagesh-alu, . . . TEL.

Cassia buds are the immature fruits of a species of cassia or *Cinnamomum*, a native of Cochin-China; and an inferior kind of cassia buds, known as Lavunga-pu, is found in Malabar. The genera or species that afford it are as yet undetermined. The cassia buds of China, Yueh-Kwei-taze, are said to be the immature flowers of *Cinnamomum Malabathrum* and of *C. aromaticum*. They are collected in Kiang-nan and Cheh-kiang and Kwang-si, and are used as a spice. They are packed with the bark, and exported to India and Europe. Cassia buds are now being largely exported from the western coast of India. It is a spice growing in favour, but still less known than it deserves.—*Simmonds; M. E. J. R.; Cleg-horn*.

CASSIA ELONGATA. *Lam., Lisane.*

C. lanceolata, Royle. | *C. senna, Roxb., H. B.*
C. officinalis, Gærtn., Roxb. | *Senna officinalis, R. Fl. Ind.*
Suna mukhi, . . . ARAB., HIND.

This senna plant, or Tinnevely senna, is found in many parts of India; and the general opinion is that the plant is indigenous, but others believe it to be only naturalized, and are of opinion that this is identical with the *Cassia lanceolata* of Forskal. Dr. Royle cultivated this plant at Saharunpur, Dr. Gibson near Poona, Dr. Wight near Madras, Mr. Hughes near Tinnevely, and Dr. Burns noticed it near Kaira. The plants in these situations yield a drug quite equal in value to the best senna. Dr. Royle remarks that *C. elongata*, *C. lanceolata*, and *C. acutifolia* seem the same.

The senna of commerce is obtained from several plants, viz. :—

1. *Cassia officinalis*, called Bombay senna, also *Suna mukhi*.

Cassia lanceolata, Forskal. | *Senna Mecca Lohajae, Forskal.*
C. medica, . . . | *Forskal.*

Cultivated in Arabia and Northern India.

The three following plants, *a*, *b*, *c*, seem the same, viz. :—

(*a*) *Cassia elongata*, Indian senna, Tinnevely senna.

Cassia lanceolata, Royle. | *Cassia officinalis, Gærtn.*
Sona-pat, . . . BENG. | *Nelapooa, . . . TAM.*
Suna mukhi, Nila- . . . | *Nela tangedu, . . .*
veri, . . . TAM.

Cultivated by Dr. Royle at Saharunpur, Dr. Gibson near Poona, Dr. Wight near Madras, Mr. Hughes near Tinnevely, and noticed by Dr. Burns near Kaira.

(*b*) *Cassia lanceolata, Auctor*, Alexandrian senna.
C. acutifolia, Heyne, Nees, Eberm.

This grows in the valley of the desert south of Syene.

(*c*) *Cassia acutifolia, Delille, Esen., Eberm.*, Bombay senna. Grows in Arabia and Africa.

2. *Cassia ovata, Merat.*

Cassia Æthiopica, Guit. | *Senna de Tripoli.*
bourt. | *Sene de Tripoli.*

Grows in Nubia and Fezzan.

3. *Cassia Forskalii.*

O. lanceolata, Forsk., Lind. | *C. ligustrina, Batka.*
Suna, . . . ARAB.

Grows in the valley of Fatme.

4. *Cassia obovata, Colladon, O'Sh* p. 306.

CASSIA FLORIDA. *Vahl., W. and A.*

Senna Sumatrana, Roxb. Fl. Ind. ii. p. 347.

May-zal-lee, . . . BURM. | *Manje konne, . . . TAM.*
Waa, . . . SINGH.

This middling-sized tree is common in a wild state in the jungles quite at the south of the Madras Presidency and in Ceylon, also as a planted tree in avenues, topes, gardens, etc. It is of rapid growth, and ornamental. The trunk is pretty straight, and covered with olive-coloured bark. The wood is of a yellowish-brown colour, sometimes beautifully marked with irregular black streaks, close-grained, hard, and durable, but not stiff; works kindly, with a smooth surface, and stands a good polish. A cubic foot unseasoned weighs 68 to 70 lbs., and when seasoned, 58 lbs.; and its specific gravity is .928. It is well adapted for furniture, but seems to be little known or used in the Madras Presidency. In Burma it is used for mallets, helves, and walking-sticks. In Ceylon it is principally used for fuel for the locomotives; and it is said to have as good calorific

powers as any wood known in the island.—*Drs. Brandis and Mason; Colonel Beddome, Fl. Sylv.*

CASSIA FORSKALII.

C. lanceolata, Lind. | *C. ligustrina, Batka.*
Suna, . . . ARAB.

Grows in the valley of Fatma.

CASSIA GLAUCA. *L., Lam., W. and A.*

C. Surattensis, Burm. | *C. cuneophylla, Koen.*
C. sulphurea, De Cand. | *Senna arborea, Van Rhee, Roxb.*
C. arborescens, Vahl.

Wellia tagera, . . . MALEAL | *Kondatantepu chettu, TEL.*

A small tree with large sulphur-yellow flowers; grows in Burma, Coromandel, and Malabar coasts. Its bark, mixed with sugar and water, is given in diabetes; and its bark and leaves, mixed with cumin seed, sugar and milk, in virulent gonorrhoea.

CASSIA LANCEOLATA. *Royle. Alexandrian senna.*

C. elongata, Lam., Lisane. | *C. acutifolia, Heyne, Nees, Eberm.*

Suna, . . . ARAB. | *Nilaveri, . . . TAM.*
Sona-pat, . . . BENG. | *Nelapooa, . . .*
Suna mukhi, . . . HIND. | *Nela Tangedu, . . . TEL.*

This grows in the valleys of the desert south of Syene. But Dr. Royle remarks that *C. acutifolia*, *C. elongata*, and this seem the same, and he describes them all as *Cassia officinalis*.

CASSIA LEAVES, Kwei-yeh of China, are obtained from *Cinnamomum nitidum*, *C. iners*, *C. tamala*, and other species. These were formerly esteemed as sudorific and stomachic medicines, and sent from China to Europe under the names of *Folia malabathri* or *Tamalapathri*, and are said to be still used in China and Ceylon, along with the twigs (Kwei Chi, also Liu Kwei of the CHINESE), in distillation, to form an oil resembling that of cloves, and known in the market as *Oleum malabathri* or *Oleum cinnamomi foliorum*. The Chinese bruise the leaves of the cinnamon tree, and use them along with warm water to wash their long black hair.—*Smith.*

CASSIA LIGNEA. *Cassia bark.*

Schikeh, . . . ARAB. | *Kahu-legi, . . . MALAY.*
Ngu-si, . . . BURM. | *Havanga, . . . MALEAL.*
Kwei pi, . . . CHIN. | *Singrowla, . . . NEPAL.*
Moederanceel, . . . DUT. | *Cassia lenhosa, . . . PORT.*
Hout-Kassie, . . . | *Twacha?, . . . SANBK.*
Casse en bois, . . . FR. | *Tamala patra, . . .*
Kassien rinde, . . . GER. | *Mukalla, . . . SINGH.*
Dalchini; Tej, . . . HIND. | *Dawul Kurundu, . . .*
Kidda; Kirramon, . . . HEB. | *Cassia lenosa, . . . SP.*
Cassiglina, . . . IT. | *Lawanga pattai, . . . TAM.*
Kayu manis china, MALAY. | *„ patta, . . . TEL.*

Cassia, an aromatic bark, is mentioned in Exodus xxx. 24, Ps. xlv. 8, and Ezek. xxvii. 19, under the words kiddah and ketsioth. Dr. Wight was of opinion that coarse barks of the cinnamon tree, which could not be passed as true cinnamon, are classed as cassia. The Chinese cassia is from *Cinnamomum aromaticum, Nees ab Esenb.*, and *C. Zeylanicum*. Dr. Royle (p. 542) concurs as to the Chinese cassia being one of the producing plants, but adds that there are several distinct sources. At present this bark is produced in Java, on the Malabar coast, in the south of China, and in Cochin-China. Pereira's *Materia Medica* says—

‘1. *China Cassia-lignea*, sometimes called China cinnamon, is the best kind. It is usually imported from Singapore, rarely from Canton direct. Mr. Reeves says vast quantities of both cassia buds and cassia-lignea are annually brought to Canton

from the province of Kwang-si, whose principal city (Kwei-sin-tu), literally the city of the forest (or grove) of cassia trees, derives its name from the forests of cassia around it.

The Chinese themselves use a much thicker bark (which they call Gan Kwei-pi), unfit for the European market, but they esteem it so highly as to pay nearly ten dollars per pound for it. A very fine quality is occasionally met with, and commands the enormous price of 100 dollars per catty (one pound and three-quarters). A specimen of it furnished by Mr. Reeves is straight, semi-cylindrical, eleven inches long, rather more than an inch wide, and about one-sixth or one-eighth of an inch thick. Externally it is warted, and covered with crustaceous lichens. Internally it is deep brown; its odour and flavour are those of cassia. Mr. Reeves also mentioned that the best cassia-lignea is cut in the third or fourth moon, the second sort in the sixth or seventh moon.

2. *Malabar Cassia-lignea* is brought from Bombay; it is thicker and coarser than that of China, and is more subject to foul-packing; hence each bundle requires a separate inspection. It may, perhaps, be coarse cinnamon, for Dr. Wight states that the bark of the older branches of the genuine cinnamon plant is exported from the Malabar coast as cassia.

3. *Manilla Cassia-lignea* is usually sold in bond for continental consumption. He had received a sample of bark ticketed "Cassia vera from Manilla," the epidermis from which was imperfectly removed.

4. *Mauritius Cassia-lignea* is occasionally met with.

The Kwei-pi, Juh-Kwei, Kwan-Kwei, and Tung-Kwei of China are the products of species of *Cinnamomum*. The Juh-Kwei, or fleshy cassia, is exceedingly pungent and spicy, and its price is quadruple that of the Kwei-pi, or skinny cassia. — *Royle*, p. 542; *Harris, Nat. Hist. of Bible; Hassall's Food and its Adulterations; Smith*.

CASSIA OBOVATA. *Merat*.

<i>Cassia Æthiopica, Guibourt.</i>	<i>Senna of Tripoli. Scene de Tripoli.</i>
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Grows in Nubia and Fezzan; one of the species yielding the senna of commerce.

CASSIA OBTUSA. *Roxb., W. and A., W. Ic.*

<i>Cassia obovata, Wall.</i>	<i>Senna obtusa, Roxb.</i>
<i>C. Burmanni, Wall., Wight.</i>	<i>Nela tangedu, . . TEL.</i>

It is indigenous in Mysore, Egypt, Suez, Nubia, and Central Africa. The leaves furnish the Aleppo and Italian drug. *C. obtusa* is common on the dry uncultivated lands of Mysore. Aleppo senna has obovate very blunt leaflets and curved pods, with a very slight covering of down. The flowers are pale yellow. — *O'Shaughnessy*, p. 307.

CASSIA OBTUSIFOLIA.

Chakowar, . . . HIND. | Jangli-powar, . . HIND.

According to Dr. Irvine (Gen. Med. Top. p. 131), the seed of this plant is used in medicine. The plant is scarce about Ajmir; is prescribed to cleanse the blood, in an entire state. When the seeds are pounded and then swallowed, vomiting is produced. The leaves of the young plant are eaten as a vegetable; are also applied in itch cases. It is very common in the Dekhan. Goats and sheep are foud of the seed; one seer of the seed costs one pice. — *Irvine*.

CASSIA OCCIDENTALIS. *L., W. and A.*

<i>Senna occidentalis, Roxb.</i>	<i>Cassia fastida, Roxb.</i>
<i>Cassia sophora, Wall.</i>	

Ka lau, . . . BURM.	Paya veri, . . . TAM.
Paya vera, . . . MAL.	Kashanda, Kasinda, TEL.

Common in Bengal; smell very offensive, used in cutaneous maladies, and also aperient. Roxburgh gives it no native name. Mr. Mason has occasionally noticed it in Tenasserim, in native cultivation for medicinal uses. It was originally introduced into India from the West Indies. — *Mason; O'Sh.* p. 309.

CASSIA OFFICINALIS. *Gærtn., Royle.*

<i>C. lanceolata, Forsk., Royle.</i>	<i>C. elongata, Lcm., Lisane.</i>
<i>C. medica, Royle.</i>	<i>C. lanceolata, Royle.</i>
<i>Senna medica Lohajae, Royle.</i>	<i>C. senna, Roxb., H. Buch.</i>
<i>Senna officinalis, Roxb.</i>	<i>C. acutifolia, Heyne, Nees, Ebern., Delille, Esen.</i>

Dr. Royle remarks that *C. elongata*, *C. lanceolata*, and *C. acutifolia* seem the same plants. He describes *C. officinalis* as cultivated in Arabia and Northern India, and, with the *C. acutifolia*, known in commerce as Bombay senna, Suna mukhi. The *C. elongata*, known as Tinnevely senna, was cultivated at Saharunpur, Poona, near Madras, near Tinnevely and Kaira, and *C. lanceolata* as growing in the valleys of the desert south of Syene, and known as the Alexandrian senna. See Cassia.

CASSIA OIL, volatile oil of cassia bark.

Tuj-ka-tel, . . . HIND. | Kulfa-ka-tel of MALABAR.

Cassia bark yields a pale yellow volatile oil, the finer kind of which differs but little in its properties from that of cinnamon, for which it is generally substituted; it has a specific gravity of 1.071 (1.095). The best is manufactured in China, where the wood, bark, leaves, and oil are all in request. The cassia oil is rated at 150 dollars per pikul; and the trade in this article reached about 250,000 dollars (Simmonds, p. 396). When pure, its pale wine-yellow colour does not deepen with age. It has in a remarkable degree the cassia odour and taste. Cassia oil is imported into Bombay from China; and in Surat the oil is expressed from both China and Malabar cassia. The latter kind, which is of a dirty-brown colour, is chiefly exported to the Persian and Arabian Gulfs, Zanzibar, etc., under the name of Koolfa-ka-tel. — *Faulkner*.

CASSIA ROXBURGHII. *D. C., W. and A.*

C. emarginata, Roxb. | Ratu-waa, . . SINGH.

This is a small or middling-sized tree, very common in a wild state in the South Arcot, Trichinopoly, Tanjore, and Tinnevely districts. It is extensively planted in gardens for ornamental purposes, and is to be seen in most compounds at Madras. When in flower it is exceedingly beautiful; it is also wild in Ceylon. The wood is close-grained, hard, and durable, works smoothly, and stands a good polish. When fresh it is deep rose-coloured, but eventually turns reddish-brown. A cubic foot unseasoned weighs 78.80 lbs., and when seasoned 63 lbs.; and its specific gravity is 1.008. It is well adapted for articles of turnery, such as naves of wheels and handles of instruments. — *Beddome, Fl. Sylv.* p. 180.

CASSIA SOPHORA. *Linn., W. and A.*

<i>C. esculenta, Roxb. in E. I. M.</i>	<i>C. Coromandeliana, Jacq.</i>
<i>C. purpurea, "</i>	<i>C. sophoroides, Collad.</i>
<i>C. torosa, Car.</i>	<i>Senna sophora, Roxb.</i>
<i>C. Indica, Poir.</i>	<i>C. esculenta, Roxb., Rheede.</i>

Kalkasinda, . . . BENG.	Sourna mayharie, . . . SANS.
Kalkashinda, . . . "	Punaveri, . . . TAM.
Round-podded cassia, ENG.	Kasainardakamu, . . . TEL.
Brihatchitra, . . . HIND.	Paidd tangedu, . . . "
Ponam tagara, . . . MALEAL.	Nuti kasinda, . . . "

Grows in Bengal, Assam, Ceylon, Malay Peninsula, Peninsula of India, and Moluccas. Its leaves are eaten in curries; bruised, powdered, and mixed with honey, are applied to ringworm and ulcers. The bark is given in infusion in diabetes.—*R. Brown.*

CASSIA SUMATRANA. *M'Clelland.*

Ma-zu-lee, . . . BURM.	Kyee, BURM. of MOULMEIN.
Bombay blackwood, ENG.	Arremene, . . . SINGH.

This tree grows in the central province of Ceylon, where a cubic foot of its wood weighs 57 lbs., and it is said to last 50 years. It is there used for furniture and house-building. It is plentiful throughout the Hlaing, Pegu, and Tounghoo forests, and is very plentiful especially on the Mazalee Choung, the name of which is derived from this tree. It is used in house-building. It affords a very strong wood like ebony.—*M'Clelland; Mr. Mendis; Cal. Cat. 1862.*

CASSIA TORA. *Lim.* Oval-leaved fetid cassia.

Cassia obtusifolia, <i>Burm.</i> , <i>Ind.</i>	Senna tora, <i>Roxb.</i>
C. foetida, <i>Salisb.</i>	Cassia tagara, <i>Lam.</i> , not <i>Lin.</i>
C. gallinaria, <i>Collad.</i>	Senna toroides, <i>Roxb.</i>
Kulkul, . . . ARAB.	Tagara, . . . MALEAL.
Dau-ky-wai, . . . BURM.	Prabunatha, . . . SANSK.
Kiueh-ming, . . . CHIN.	Tukarini, . . . TAM.
T'au-kiueh-ming, . . . "	Tagashai; Tagaray, . . . "
Chakunda, . . . HIND.	Tantepu chettu, . . . TEL.

The seeds—Kiueh-ming-tsz, . . . CHIN.

Common all over the plains of India, and, in Tenasserim, it is one of the most abundant weeds. Its leaves are fetid, mucilaginous, and gently aperient. They are much used for adulterating senna, and in various external applications. The seeds, ground with sour butter-milk, are used with excellent effect in itchy eruptions; and they are used in preparing a blue dye, generally fixed by lime-water. The root, rubbed to a pulp with lime-juice, has almost specific powers in the cure of ringworm.—*O'Shaugh. p. 309; Roxb. ii. 340.*

CASSIS, a genus of shells; many species occur in the E. Indies. *C. rufa*, the great red shield shell of the Maldives, is brought as tribute to Ceylon, and is re-exported to Italy for the manufacture of cameos.—*Tennent's Ceylon.*

CASSOWARY BIRD. See *Casuarus*; *Emu.*

CASSYTA FILIFORMIS. *Lin.*, *Roxb.*

Calodium Cochinchinense, Lour.

Akash bulli, . . . BENG.	Kottan elle, . . . TAM.
Akash-wali, . . . BOMBAY.	Antara valli tige, . . . TEL.
Kottan ka paat, . . . DUKH.	Nulu tige, Pachi tige, . . . "
Akateja bulli, . . . MALEAL.	Pane tige, . . . "

The leaves are put into butter-milk as seasoners, and are chiefly in use amongst the Brahmans in the southern parts of the Peninsula.—*Ainslie.*

CASTACALA. *SANSK.* A division of time equal to the 28th part of a vicala.—*Warren.*

CASTANEA, a genus of plants of the natural order *Corylaceæ*.—*C. Chinensis, C. Indica, C. Roxburghii, C. tribuloides, and C. vesca* inhabiting the colder parts of S.E. Asia. Dr. Mason says an indigenous chestnut tree grows in Burma on the uplands, which yields abundantly, and whose fruit is sold in the bazar; but they will not compare with the French chestnuts, nor even with the American chincapin. Two species are cultivated on the China hills. One somewhat like the

Spanish, produces fruit quite equal, if not superior, to Spanish chestnut. The other is a delicious little kind, bearing fruit about the size and form of the common hazel-nut. Large quantities of both kinds were procured by Fortune, and sent on to India in Ward's cases, and many hundreds of plants reached India. The Chinese chestnut may now be considered naturalized on the hills of India, and in a few years will no doubt make its appearance in the markets amongst other fruits.—*Fortune's Residence; Mason; Voigt.*

CASTANEA INDICA. *Roxb.* Theet khya, BURMESE. A tree of Nepal and the Himalaya, of Chittagong, Khassya, Rangoon, Pegu, and Tounghoo. The edible nut, Nikiri, HIND., is compared to indifferent filberts; the wood is red, and equivalent to mahogany.—*Drs. Royle, p. 345, M'Cl., Mason, Voigt, p. 276, O'Sh. p. 607.*

CASTANEA MARTABANICA. *Mason.* Theet khya; Zi-tha, BURM. | Norne of . . . TAVOY.

This tree of Moulmein and Martaban grows all down to the sea-shore of Tenasserim. The fruit is eaten like chestnuts.—*Mason; Cal. Cat. Ex.*

CASTANEA TRIBULOIDES. *Lindley.* Wet-theet-ky, BURMESE. A tree of the Nepal and Khassya hills, and of Burma.

CASTANOSPERMUM AUSTRALIS. Moreton Bay chestnut. Has been introduced into India from Australia. It is of rapid growth; rises to 70 to 100 feet high. Its wood is used for cask staves. It is indigenous in Moreton Bay. Some of its pods are 10 inches long and 8 round. They contain several seeds, in size and colour resembling horse-chestnuts, but in flavour between a Spanish chestnut and a fresh-opened bean, with a slight degree of bitterness. The natives roast them and soak them in water, to prepare them for food.—*J. Backhouse, Visit to Moreton Bay, Australia.*

CASTE is a term obtained from the English cast, and that from the Portuguese or Spanish Casta, a breed, race, lineage, or class. It is applied to the separate sections of the Hindu races, who now usually employ the word Jat or Zat, meaning birth or descent, though the Sanskrit term Varna, meaning colour, has been in use from the most ancient times till now. Caste is the first institution of Hindu society which forces itself upon the attention of the stranger. Bunsen says that the system of caste seems to have become completely formed B.C. 3000, during the formation of the kingdom of Puru; and, he adds, was in full force when the Code of Menu was composed. In the Vedic hymns nothing appears of a priesthood, properly so called. In some, Brahmans officiate, but are evidently subject to the Kshatriya, as chaplains to the noblemen. The allusion to castes is very vague, as when the five classes of beings are mentioned, which may mean the four castes of Aryans and a fifth of the barbarians. But there is one hymn in the Veda, known as the Purusha Sakta, which represents the Brahman as superior, though it does not correspond with the legend on that subject in its later form. It is given in Dr. Muir's Sanskrit Texts (p. 7), and is a mystical description of existences from original being, under the similitude of a sacrifice or as a mental sacrifice.

Sir Henry Elliot says that about the 6th and 7th centuries the divisions of castes were secular, not religious. In former times, he says, the four classes existed equally amongst the Buddhists

and Hindus of India, as they do at this day amongst the Buddhists of Ceylon, and amongst the Jains of the Peninsula, in whose temples even Brahman priests may be found officiating.

A minute division of labour is a very marked feature in Hindu civilisation. Every employment is apportioned to a separate class. This minuteness of appointment is generally the result of a very far advanced stage of society, but seems to have obtained among the Hindus from very early times.

In ancient Hindu writings, four great divisions are recognised,—the Brahman, or learned; the Kshatriya, or warrior; the Vaisya, or merchant; and the Sudra, or labourer,—all others being M'lecha. But in practice, at the present day, the minute differences of race, of native country, of avocation, and of religion, are sufficient to form differences of castes, in most of which no man may lawfully eat with any individual of any other caste, or partake of food cooked by him, or marry into another caste family; but he may be his friend, his master, his servant, his partner. As a rule, it may be said that the Aryan or 'twice-born' castes adhere most closely to the ethnical principle of division; the 'once-born' or distinctly non-Aryan to the same principle, but profoundly modified by the concurrent principle of employment; while the mixed progeny of the two are almost entirely classified in modern times according to their occupation.

The Brahmins are popularly divided into ten great sects, according to their locality,—five on the north, and five on the south of the Vindhya range. But the minor distinctions are innumerable. Thus the first of the five northern sects, the Saraswata, in the Panjab, consist of 469 classes. Mr. Sherring enumerates 1886 separate Brahmanical tribes.

Their sectarian religious views are now also sources of separation. In the physiological worship of the Hindus, for instance, while two classes of sectarians, the Saiva and the Lingaet, worship the form of the lingam, another set of sectarians, the Sakta, worship the yoni, in accordance with the doctrine of the Tantras. The Sakta are divided into two classes, the Dakshinachari, or right-hand Sakta, and the Vama chara, or left-hand Sakta. The right-hand worship is public, and addressed to the goddesses usually adored, but especially to the forms of Durga, Bhawani, and Parvati, also to Lakshmi and Maha Lakshmi, and others. But in the worship of the left-hand divisions, the Tantrika impersonations of Durga as Deva, Kali, Syama, etc., or a living woman representing the Sakta, the worship is private, and said to be impure, and is said to have the most numerous followers. The Vira Saiva, who are known as the Jangam, also as the Lingaet or Linghadari, from always wearing the lingam, and who are very numerous in the Canarese-speaking tract, ought not, according to the tenets of their sect, to have any caste distinctions; but they are the most bigoted of all the Hindu sects, and their caste distinctions are those of trade and avocation, and are rigidly adhered to. Among the Jains, whose religion consists principally in the practice of austerities, and in avoiding to destroy life, caste restrictions are not prescribed; nevertheless they too retain the practice of caste divisions, and the Sarawak practise many usages common to other Hindus.

The distinction of right and left hand castes is peculiar to the south of India. It is supposed by Professor Wilson to be of modern origin, and to have been introduced at Conjeveram as a part of civil policy to divide the people and destroy their power. But Sir Walter Elliot is of opinion that the separation into right and left hand castes had its origin in the violent conversion of the ancient races from Buddhism to Hinduism; and he has been shown a figure of Buddha, which the artisan caste worship. At present they appear to worship Visvakarma, but the bulk seem to recognise Siva as their supreme deity. They all bury their dead, and in a sitting posture, like that of Buddha, sitting, with the head of the corpse close to the surface, and looking to the north; and their dislike to Brahmins is intense. In Southern India, the goldsmiths strenuously resisted the rule of the Brahmins, and for ages claimed to be the true spiritual guides, styling themselves Acharyas, 'religious teachers,' and wearing the sacred thread. The Dattas, a sept of the Kayasth or writer caste, formally renounced the position assigned to them in the Brahmanical classification of Hindu society. They claimed to rank next to the Brahmins, and thus above all the other castes. They failed; but a native author states that one of their body, within the memory of men still living, maintained his title, and wore the sacred thread of the pure 'twice-born.' In the Peninsula, caste had certainly nothing to do with religion, but related solely to race. Amongst the Tamilian people the right and left hand sections appear. The Idan-kai or Idan-gai are the left-hand caste, and the Valan-gai are the right-hand caste; and, according to Professor Wilson, the names and appellations of Right-hand castes vary in different parts of peninsular India, but are usually supposed to be eighteen in number. He names them—

1. Banijaga or trader.
2. Okhaliga or cultivator.
3. Jotiphana or oil-maker, employing one bullock.
4. Rangajiva, dyer or calico printer.
5. Jadaru, Mahomedan traders and artificers.
6. Gujarati, bankers from Gujerat.
7. Komati, merchant shopkeepers of the Vaisya.
8. Jaina.
9. Kurubar, shepherds.
10. Kumbhar, potters.
11. Agasa, washermen.
12. Besta, fishermen employed as palanquin-bearers.
13. Padma Shalaysa, weaver.
14. Naindu, a barber.
15. Upparanu, a tank-digger.
16. Chitragara, a painter.
17. Golla, a cowherd.
18. Wallia, or Pareyan, or Paria, who is the champion for the right-hand caste, as is the Madaga or Sakoli for the left-hand caste.

The Left-hand castes—

Edagai; Edagai kula; Idangai; Idam; Idakai,
Eddayai, . . . KARN. TAM.

1. Panchala or artisans.
 - a. Kammaramu, blacksmiths.
 - b. Badage, carpenters.
 - c. Kanasagar, braziers.
 - d. Kallurtiga, stone-cutters.
 - e. Akasale, goldsmiths.
2. Berisethi, traders.
3. Devangada, weavers.
4. Ganigar, oil-makers.
5. Gollur, money-carriers.
6. Paliwan and Palawan, cultivators.
7. Beda, hunter, fowlers.
8. Madiga, tanners, curriers, and shoemakers.

The right and the left hand sections are known in the Bellary district as the Davachary and Dowanga. Their enmity has been a constant source of anxiety to the police of the Madras districts.

The artisans intermarry and eat together, and all wear the zonar. They claim to be a prior Brahman race,—and learned Europeans recognise their claim. The intermarriages of castes in ancient times, and the descendants of illegitimate children, have been known as mixed castes, the Varna sankra, to whom Menu allotted suitable avocations. The ancient marriage code recognised as lawful, unions of men of higher castes with females from any of the lower ones, and their offspring had a quite different social status from the progeny of illicit concubinage. In bygone times, individuals and even races have been raised to castes of higher rank, and others have been lowered. There have been occasions of rulers of the Dekhan and of Hindustan raising great numbers to the rank of Brahmans, others to the rank of Kshatriya; and many of the races now ranked as Sudra Hindus have been comparatively recent converts. Other instances are known of Brahmans as individuals and clans being degraded. In Bengal, the Ahir, Kunbi, Lohar, Mali, Tumboli, Kumar, Hajam, and Kahar are considered unclean. The Veluthaden of Travancore are said to be descendants of a Brahman who was seen to wash and starch a friend's cloth, and was in consequence thrown out of caste. Cloths washed by them are, however, received into pagodas. The ancestors of the Urila parish Musinmar of Travancore, who accepted gifts of land from Parasu Rama; the ancestors of another subdivision, who countenanced the murder of Bhutarya Pandi Perumal, a sovereign of Malabar; and the ancestors of the villagers of Panniyur, who offered insult to the idol Varaha, an object of worship of other Brahmans,—all of these have lost their castes; and although claiming still to be Brahmans, they cannot associate on equal terms, cannot eat nor intermarry with other Brahmans. There are religious mendicants who accept alms only from certain castes. The caste ideas of ceremonial uncleanness are very peculiar. A Hindu visitor to a European house changes all his clothes, and uses the secretions of the cow on his return home from the visit; or, on being visited by a European, has the floor spread with fresh cow-dung. Every workman is clean in his own trade; but no Hindu will use any article of earthenware which a M'hlecha has polluted by his touch; all earthen vessels are immediately broken, and brass or copper utensils are scoured with sand to free them from impurity. There are places where water is given to the natives as they walk along the road. Small brass pots are kept for the caste people, but there is no pot kept for the Pariah. So, if a Pariah wish to quench his thirst at some of these water pandals, a long hollow bamboo is provided, one end of which the thirsty man holds. Water is then poured down the tube, and he has to catch the water in his mouth after it leaves the tube. He is not allowed to put his lips close to the bamboo, for fear of defilement.

If a Jain come into contact with an outcaste, he, like the Hindu, touches fire or water to purify himself; if he have occasion to receive anything from a Pariah, he causes the Pariah to set it down on the ground, and purifies it with fire or

water before he takes it up. Even shepherds and Koli incur pollution by touching the Dher race, which they remove in a similar manner. In the course of evidence before a criminal court in Gujerat, in August 1853, a Koli said, 'The shepherds Bhugwen and Rodo came to me, and said they had both touched Dhers, and become impure, and asked me to give them fire. I took a lighted coal out of my hookah, and each of them touched his forehead with it. I threw it down, and they then took my hookah and smoked.' In other words, they were then purified, otherwise he could not have given them his hookah. This is a very ancient Asiatic purificatory rite. Isaiah (vii. 5, 6, and 7) says: 'Woe is me, . . . I am a man of unclean lips. . . . Then flew one of the seraphims unto me, having a live coal in his hand, . . . and he laid it upon my mouth, and said, Lo! this hath touched thy lips, and thine iniquity is taken away, and thy sin purged.' If a Sudra Hindu ask a drink of a Brahman, it will be given in a brass vessel, but from a distance, the Brahman stretching forwards and placing the pot between. It is returned similarly, but before receiving it back, water is poured over to purify it. No one of the helot races can enter the house of a Hindu, but he will stand at a distance and shout out his message. These are all illustrations of the usual operation of caste in India, which has held its own in the religious, social, and political changes of 3000 years. Since railways and steamboats have been running, and the educational system of the British has equalized all classes, much of the dread of caste defilement has disappeared, but it is still the prominent feature in everyday Hindu life.

All the great Hindu reformers have proclaimed the brotherhood of man, and have denounced castes, but their followers are only free amongst themselves.

A line in the Mahabharat is—

'Na Viesho'sti varnânām;
Brâhman idam jagat,
Brahmanâ pûrva srishtam hi;
Karinabhir varnatâm gatam :'

'There is no distinction of castes; the whole of this world is Brahmanical, as originally created by Brahma. It is only in consequence of men's actions that it has come into a state of caste divisions.'—*Growse*, p. 502; *Forbes' Rasanala, or Hindu Annals*; *Wilson's Glossary*; *Sir H. Elliot's Supplementary Glossary*; *Sir Walter Elliot in Ethnological Society's Journal*.

CASTILLOA ELASTICA and C. Markhamiana of S. America, introduced into India in 1876 by Mr. Cross and Mr. Markham, are valuable caoutchouc plants.—*Peruv. Bark*.

CASTING OF METALS in S.E. Asia is very largely practised, and the processes are of great simplicity. The workmen generally prepare a model in wax, which is embedded in moist clays, which, after being dried in the sun, is heated in the fire, the wax run out, and the metal run in. A much better plan, where accuracy is required, as in casting a brass nut or box for a large screw, is to cast the model in lead, and, having bedded it in clay, it may, when the mould is dry, be melted and run out, and the metal run in. Wax models allow the moulds to shrink in drying, and the thread of a screw-box so formed of course does not correspond. In Manbhūm, much ingenuity

is displayed in the mode of casting articles of this kind in hollow network, etc. A core is made of plastic clay, all carefully shaped to the internal form of the fish or other object to be imitated. This core is then baked and indurated. On this, the pattern designed to be represented is formed with clean beeswax. This done, and the wax having cooled, it becomes tolerably hard. Soft clay is moulded over all. The whole is then baked, the heating indurating the outer coating of clay, but softening the wax, which all runs out of the mould, leaving empty the space occupied by it. The mould being sufficiently dried, the molten brass is then poured into the empty space, and, when cool, the clay is broken away, when the figured casting is seen. These are untouched after the casting, excepting on the smooth and flat surfaces, which are roughly filed.—*Mr. Rohde, MSS.; Cal. Cat. Ex. 1862.*

CASTOR.

Ashbutehagan, . .	ARAB.	Castora zibetto, . .	IT.
Bivergeil, . . .	DUT.	Jabat, . . .	MALAY.
Hai-kau-shin, . .	CHIN.	Dodes, Kasturi, Rase, . .	
Castoreum, . . .	FR., LAT.	Castoreo, . .	PORT., SP.
Bibergeil, . . .	GER.	Tabuwaja struga, . .	RUS.
Gond badustar, . .	HIND.	Kasturi, Munai, . .	TAM.

A concrete substance obtained from two small glands in the beaver, Castor fiber, of both sexes. 'The glands' consist of two oval pyriform sacs of unequal size, which open into the preputial groove by two large orifices. Those of the adult animal are at least three inches in length, sometimes five. Those of the female are somewhat less developed. In the living animal the castoreum is an almost fluid unctuous substance of a strong penetrating and even fetid odour; when dried, the sacs have a dark-brown colour and wrinkled appearance. Both American and Russian castoreum are known to commerce, and are imported into India. In Eastern medicine, castoreum is supposed to affect especially the uterus, and is given also in hysteria and apoplexy; it was formerly used in European practice. A kind of castor is also obtained from the civet cat in the Archipelago. Hai-kau-shin, the Chinese name, means sea-dog kidney, and the kidney of a dog is often substituted.—*O'Sh. p. 614; Smith; Moquin Tandon.*

CASTOR and POLLUX. Their representatives in the Hindu mythology are the Aswini Kumara. See Aswin; Hindu; Saraswati.

CASTOR-OIL.

Zeit ul khurwa, . .	ARAB.	Linga jarak, . . .	JAV.
Ky et taut shi, . .	BURM.	Miniak jarak, . .	MALAY.
Pi-ma, . . .	CHIN.	Roghan bed-anjir, . .	PERK.
Huile du Ricin, . .	FR.	Ricinsoel, . . .	SP.
Rizinus oil, . . .	GER.	Chittamanak yennai, . .	TAM.
Arrandi-ka-tel, . .	HIND.	Chitta amudam, . .	TEL.
Olio di Ricino, . .	IT.		

Castor-oil is obtained by expression from the seeds of the *Ricinus communis* or *Palma christi*, which grows in all the warmer countries of the world. It is often described as 'cold-drawn castor-oil,' which is understood to express that the oil has been obtained without the aid of heat; and hot-drawn castor-oil, when the seed is subjected to slight dry heat, and then pressed; but it may be doubted if any of the castor-oils of commerce are ever expressed from the seeds without prior dry, or subsequent water, heating. There are, however, two varieties of the castor-oil plant grown in India, the large and the small, and the

mode of obtaining their respective oils may perhaps vary in different districts. One mode of obtaining the oil is to separate the seeds from the husks by children throwing them against a wall, then to bruise them by tying them up and beating them in a grass mat. In this state they are put into a boiler and boiled until all the oil is separated, which floats at the top, and the refuse sinks to the bottom; it is then skimmed off, and put away for use. The purest oil is said to be obtained by crushing the seeds in horse-hair bags by the action of heavy iron beaters; as the oil oozes out, it is caught in troughs, and conveyed to receivers, whence it is bottled for use. Castor-oil is used medicinally, also for lamps in the East Indies; and the Chinese are said to have some mode of depriving it of its medicinal properties, so as to render it suitable for culinary purposes. The plant is very extensively propagated by the Karens, to obtain the seeds to mix with their dyes, and fix their colours. The oil obtained from the large-seeded variety is sometimes drawn cold, and its straw-coloured specimens are scarcely distinguishable in quality from the oil of the small-seeded variety. It is, however, more usually extracted by heat, and forms the common lamp-oil of the bazar. The roasting process gives it a deeper red colour and an empyreumatic odour. The price of this oil varies in different parts of the country from Rs. 1.10.0 to Rs. 3.13.6 per maund of 25 lbs. As with other coloured substances, filtering and light soon decolorize the coloured castor-oil. The best filtering material is animal charcoal, and the sun's rays finally remove all shade of colour.

Castor-oil seeds, Pi-ma-tsz, CHINESE, crushed, are applied externally in Chinese medicine in a great multitude of diseases.—*Rohde, MSS.; Cal. Cat. Ex. 1862.*

CASTRO. Don Juan de Castro, captain in the fleet, and author of the history, of Don Stephano de Gama, which in 1510 sailed from Goa to Suez, with the intention of burning the Turkish galleys there.

CASTURI-MUNJIL. TAM. *Curcuma zedoaria*.

CASUARIA POMANDRA, Tha-byai-ywet-kya, BURMESE, is found in the Pegu districts, but scarce. Timber strong and close-grained. Wood white-coloured, adapted for fancy work and cabinet-making.—*M'Clelland.*

CASUARINA. Several species of this genus of trees grow in India,—*distyla*, *equisetifolia*, *moliflora*, *muricata*, and *torulosa*, and in Australia, as *C. Decaisneana*, *C. quadrivalvis* or Australian oak, *C. torulosa* or forest oak, *C. paludosa* or swamp oak or fir, and *C. suberosa* or cork-bark oak, from the peculiar appearance of its bark. Others, as the *C. distyla*, *C. Fraseriana*, *C. glauca*, are from their resemblance also called firs. The Madagascar name is *Filaof*. The wood of some species is extremely hard, and used by the Pacific islanders for war-clubs. Whilst every other kind of vegetable and meat was eaten with the fingers, cannibal food was touched only with forks, generally made of the wood of the Nokonoko (*Casuarina equisetifolia*, *Forks*.) or the vesi (*Azizia bijuga*, *A. Gray*), bearing curious, often obscene names, and having three or four long prongs. The reason given for this deviation from the general mode of eating was a widely-spread belief, that fingers which have touched bokola are

apt to generate cutaneous diseases when coming in contact with the tender skin of children.

Kayu aru, the *C. littorea*, is often termed a bastard pine, and as such gave name to the Isle of Pines discovered by Captain Cook. By the Malays it is usually called Kayu chamara, from the resemblance of its branches to the ornamental cow-tails of Upper India. It delights in a low sandy soil, and is ever the first that springs up from land relinquished by the sea. In Australia there occur about eight species. — *G. Bennett; Von Mueller; Galton's Vacation Tourists*, p. 268.

CASUARINA EQUISETIFOLIA. *Forst.*

Sarv ka jhar, . . .	DEK.	Arau tree, ANGLO-MALAY.
Beef-wood, . . .	ENG.	Iron-wood of the S. SEA IS.
Fir tree, . . .	"	Chouk maram, . . . TAM.
Filaof of MADAGASCAR.		Serva chettu, . . . TEL.

This tree was introduced into India about the beginning of the nineteenth century, and grows freely, ripening its seed in great abundance. In general appearance it much resembles the larch fir. It grows in 10 years to the height of about 30 feet, generally very straight, and, where the main shoot is broken or lopped off, throws out secondary shoots readily, which are usually erect. It thrives best in sandy tracts along the sea-shore. The wood is very hard, is reddish in colour, and in density and appearance it somewhat resembles Trincomlee. It bears a great strain, is well adapted for posts, and is said to bear submersion in water very well. The bark contains tannin, and a brown dye was extracted from it by M. Jules l'Epine of Pondicherry. It is a favourite avenue tree, and, if kept stunted, forms a beautiful hedge. It has been very extensively planted in various parts of the Madras Presidency, on the coast and inland, but the larva of a large species of *Acheta* has caused much injury to plantations near Madras. It appeared suddenly in September 1867. The larvæ burrow in the sand in subterranean passages, and during the night emerge from the sand and crawl up the young trees, generally biting off the young shoots. The wood is burned in Tahiti to produce a ley for soap. — *M. E. J. R.*

CASUARINA MURICATA. *Roxb.* Fir tree.

<i>C. littorea</i> , <i>Rumph.</i>	|	<i>C. littoralis</i> , <i>Salisb.</i>
H'ten-roo, . . .	BURM.	Harl, . . . HIND. ?
Tinian pine; Beef-wood.		Kayu aru, . . . MALAY.

This is grown in all parts of the Dekhan, where it was introduced about 1830. It is a native of Chittagong, is the only species indigenous to the Tenasserim coast, and has been diffused over Bengal. In Tenasserim, it is found only in the loose sandy soil of the seaboard, and never inland. In general outline it resembles the pine, but it is of a more slender figure, and more elegant in appearance. Growing eighty feet high, and spreading out, without a leaf of covering; its numerous fine-knotted branchlets, mantled with brilliant green, and hanging in drooping bunches, or floating out lightly upon the breeze like long skeins of green silk, adorn it with the most graceful drapery, and make it one of the most desirable trees for embellishing a Tenasserim park. Trunk 3½ feet in circumference 4 feet above the ground. The wood is very hard and durable; and the Tahitians in their war days chose it for the manufacture of their ingeniously carved war-clubs; hence they termed it the club-wood. They also fashioned fishing-hooks from its roots. It is imported into the United States in

considerable quantities, for various purposes where a hard, heavy wood is required. The natives of Tenasserim call it by the same name as the pine. — *Drs. Roxb. iii. p. 59; Riddell and Mason.*

CASUARIUS, the cassowary, a genus of great birds belonging to the section *Struthionidae*. Three species are known, — *C. galeatus*, a native of Ceram, C. Australia, inhabiting the Cape York district of Australia, and *C. Bennettii*, whose domicile is New Britain. The Malay name is Suwari, from which the European one is taken.

Casuarus galeatus inhabits the island of Ceram only, and, like the cockatoos, crown pigeons, and birds of paradise, was made known to the inhabitants of the west through the Malay and Javanese, who have immemorially carried on a trade with the country of the Papuans. It is a stout, strong bird, standing five or six feet high, and covered with long hair-like feathers. Its head has a large horny casque or helmet.

Casuarus Bennettii, *Gould*, is the cassowary of the island of New Britain, near to New Guinea, where it is called Mooruk. The height of the bird is three feet to the top of the back, and five feet when standing erect. Its colour is rufous, mixed with black on the back and hinder portions of the body, and raven black about the neck and breast. The loose wavy skin of the neck is beautifully coloured with iridescent tints of bluish purple, pink, and an occasional shady green, quite different from the red and purple caruncles of the *Casuarus galeatus*. The feet and legs, which are very large and strong, are of a pale ash colour. This bird also differs from the *C. galeatus* in having a horny plate instead of a helmet-like protuberance on the top of the head; which callous plate has the character of and resembles mother-of-pearl darkened with black-lead. The form of the bill differs considerably from that of the emu, *Dromaius Novæ Hollandiæ*, being narrower, larger, and more curved, and in having a black or leathery case at the base. Behind the plate of the head is a small tuft of black hair-like feathers, which are continued in greater or lesser abundance over most parts of the neck. The egg is about the same size as that of the emu, and is of a dirty pale yellowish-green colour. The bird appeared to Dr. Bennett to approximate more nearly to the emu than to the cassowary, and to form the link between these species. In its bearing and style of walking it resembles the former, throwing the head forward, and only becoming perfectly erect when running; it also very much resembles the apteryx in its body, in the style of the motion, and in its attitudes. Its bill presents a great deal the character of that of a rail; it utters a peculiar chirping whistling sound, but also a loud one resembling that of the word Mooruk, whence, no doubt, is derived its native name. The male is selfish and easily irritated. It kicks always in front, its legs sometimes reaching as high as a man's waist.

Casuarus galeatus, *Gould*, the helmeted cassowary of Ceram, is so called from the horny helmet which surmounts the head. Its rudimentary wings consist of five long bristles like blunt porcupine quills. It runs swiftly with a bounding motion. It feeds on fruits, birds' eggs, insects, crustacea, and tender herbage. It is a stout and strong bird, standing five or six feet high, and covered with long, coarse black hair-like feathers.

The head has a large horny casque or helmet, with bright blue and red colours on the bare skin of the neck. These birds wander about in the vast mountain forests that cover the island of Ceram. The female lays three to five large and beautifully shagreened green eggs, on a bed of leaves. The male and female sit alternately on the eggs for about a month.

Dromaius Novæ Hollandiæ rises to a height of seven feet. It lives on fruits, eggs, and small animals.—*Crawford's Dictionary*, p. 84; *London Athenæum*, Dec. 12, 1857, p. 1551; *Wallace*, ii. p. 86; *Dr. Bennett in a letter dated Sydney*, 10th Sept. 1857; *G. Bennett*, p. 260.

CASVINI, the name in history of Zacaria ibn Mahomed bin Mahomed al-Kousi al-Kazvini. He wrote the *Ajaib-al-Makhlukat*, or the Wonders of Creation, in the Arabic tongue. It treats of natural history, of the qualities of animals, vegetables, and minerals, as also of waters, aerial spirits, fairies, genii, and talismans; but all with a view to confute the Jewish rabbins. His work is much esteemed by Mahomedans. It has been translated out of Arabic into the Turkish language, and also into Persian. There seems to have been another Casvini, who is the person meant by Abd-al-Latif, author of the book called *Lubb at Tawarikh*. He is cited by Golius in his *Notes on Alfargani*, pp. 4, 5, 6, and 22.—*History of Genghiz Can*, p. 418.

CAT, puss, pussy-cat, kitt of the Arabs.

Billi,	HIND.	Si-mi,	SOKPA.
Min-khyeng,	KAMT.	Pone,	TAM.
Maida,	PERA.	Pilli,	TEL.

Cats are found throughout the south and east of Asia. The name of the wild cat in many languages seems to be related to puss. The Persian is *Puschak*; Afghan, *Pischik*. Even the Kurd keeps his *Psik*, the Lithuanian is attached to his domestic *Piije*, and the Turk has a kindly feeling for the *Puschik*. They are mentioned in a Sanskrit writing 2000 years old, and there are figures of them on the monuments of Egypt of a much prior age. Mummy cats have been identified with the *Felis chaus*, and with *F. caliculata*, *F. bubastes*, both still found in Egypt, wild and domesticated. No mention of the cat occurs in the Bible, or in any Assyrian record. Even in India Professor Max Müller is quoted as saying that it was but recently known as a domestic animal. Its Sanskrit name is *Māṛjāra*, from a root meaning to clean, from the creature's habit of licking herself at her toilet. Her mousing habits were well known to the Romans, and even to the Etruscans, as shown by antique gems and even wall-paintings. The mouse-killer domesticated among the Greeks, called *γᾰλῆ*, described by Aristotle, has been shown by Professor Rolleston to have been our white-breasted martin (*Martes foina*). The *γᾰλῆ ἄγρια* or *ἰκτίς* was a polecat, a founart, larger, and a great lover of honey as well as a killer of birds. Pallas, Temminck, and Blyth believe that the domestic cats are descendants of several wild species which readily intermingle. *F. sylvestris* is wild in Scotland. *F. lybica* is the wild cat of Algiers; in S. Africa, *F. caffa* is wild. In India are four wild species, of which *F. chaus* has a lynx-like tail. *F. ornata* or *torquata* occurs at Hansi, and *F. manul* in Central Asia. In the Isle of Man cats are tailless, and have long hind legs. The domestic Creole cat of Antigua is small, with an elongated head, and that of Paraguay, also small,

has a lanky body. In the Malay Archipelago, Siam, Pegu, and Burma, all the cats have truncated tails with a joint at the end. In China a breed has drooping ears. The long silky-furred Angora cats are annually brought to India for sale from Afghanistan, with caravans of camels, even so far as Calcutta. These animals are currently known as 'Persian cats;' but Mount Stuart Elphinstone remarks that 'they are exported in great numbers from Afghanistan, but are not numerous in Persia, whence seldom or never exported.' Lieut. Irwin also notices that 'they are bred in Kabul and some parts of Turkestan, and very improperly called "Persian," for very few are found in Persia, and not any exported. The Kabulis call this cat *baruk* or *burak*, and they encourage the growth of its long hair by washing it with soap and combing it.' It is supposed to be the descendant of the *F. manul* of middle Asia. It breeds freely with Indian cats. There is a wild cat in Borneo. In Australia there was no feline animal, no apes, monkeys, cats, tigers, wolves, bears, or hyenas; no deer or antelopes, sheep or oxen; and no elephant, horse, squirrel, or rabbit; but it has marsupials only, kangaroos, opossums, and the duck-billed platypus. In Europe, cats play a considerable part in folk-lore; they appear and disappear unexpectedly, they haunt the paths of the night, and they are the only friends of old women with a repute for necromancy. Whittington, so long the hero of a favourite nursery-tale of England, is rivalled by the story of the Florentine Messer Ansaldo degli Ormanni. In a letter of Conte Lorenzo Magalotti in the *Scelta di Lettere Familiari*, published by Nardini, London 1802 (p. 139), are described his two cats, 'due bellissimi gatti, un maschio, una femmina,' which soon relieved the king of an island (Canaria), on which he had been cast by a violent tempest, from the plague of mice, and he was recompensed 'con richissimo doni.'—*Eurl*, p. 233; *Darwin's Animals and Plants*; *Sair-ul-Balad in Ouseley's Tr.* i. 171.

CATABENI, an ancient mercantile race, who made Okelis their seaport. See Okelis.

CATALAPTA BUNGEI. *Smith*. *Ts'in, Hia, CHIN.* A large timber tree of China. Its wood is used for chessmen, chess tables, and weighing-scale frames. Formerly in China its leaves were worn as an ornament at the beginning of autumn. *C. syringifolia*, *Sims*, a timber tree of Japan, of Ohio, and the Mississippi. Its wood used similarly to that of *C. bungei*.—*Smith*.

CATALI-KAI. *TAM.* *Capparis horrida*.

CATAMARAN. *ANGLO-TAM.* The *Kattay maray* of the Tamil people. A boat-shaped raft on which the natives of the Coromandel coast, for fishing, etc., cross the surf that continuously washes their shores. It is composed of three logs of wood pointed in front, made still more prow-form by wedge-like sharpened timber, and widening to the stern. The catamaran rides lightly on the sea, and rises to an ordinary surf, but is overwhelmed and tossed and rolled about by a great breaker, and the natives usually dive away to avoid the advancing angry mass of water. See Boat.

CATAPA. *MALEAL.* *Terminalia catappa*.

CATARACTS. Of these there are several in India. Where the river *Shirhawti* falls into the Gulf of Arabia it is about one-fourth of a mile in width, and in the rainy season some thirty feet in depth. This immense body of water rushes

down a rocky slope for 300 feet at an angle of 45°, at the bottom of which it makes a perpendicular plunge of 850 feet into a black and dismal abyss, with noise like the loudest thunder. The whole descent is therefore 1150 feet, or several times that of Niagara; but the volume of water in the latter is somewhat larger than in the former. The principal cataracts or waterfalls in India are near Simorri, in Rohilkhand; at Gokak, on the Gutpurba; on the Gairsuppa, where from top of fall to surface of basin is 888 feet, and the depth of basin is 300 feet=1188 feet, and from 300 to 600 feet across during the rains; Yena, in Mahabaleshwar, 600 feet; Cauvery, 370 and 460 feet; cataracts of Subunreka, Chutia Nagpur, and Hurrori Ghat,—the falls 15, 20, and 400 feet respectively, about 500 feet across crest.—*Cur. of Sc.; Buist's Cat.*

CATCALEJI or Catcaranja. HIND. Guilandina bonduc.

CATECHU, Terra japonica, cutch.

Shia-dza,	BURM.	Katchu,	GER.
Sha-si,	"	Kuth; Cutch, . . .	GUJ.
Cutt,	CAN.	Katha; Khair, . . .	HIND.
Wu-tie-ni,	CHIN.	Catecu,	IT.
Wu-tieh-ni,	"	Kachu (of Acacia),	MALAY.
Hai-rh-cha,	"	Gambia (of Uncaria),	"
Rh-ch'a, Yang-cha,	"	Catch,	PORT.
Cachou,	FR.	Kash katti,	TAM.

Several astringent extracts prepared from the woods, barks, and fruits of various plants are known as catechu, cutch, terra, terra japonica, and gambier. They form articles of commerce, and are employed in tanning and dyeing. That called kut or kutch by the natives of the East, and *cutch* and *terra japonica* in commerce, is an extract prepared by cutting into chips the inner brown-coloured wood of the Acacia catechu, and making a decoction, which is afterwards evaporated to a proper consistence. The extract from the Uncaria gambier is also known in the market as cutch, as also is the extract from the nuts of the Areca catechu. At the Madras Exhibition of 1855, catechu was seen in the form of—1. Circular flat cakes from Travancore, covered on both sides with paddy husks. 2. Large flat cakes from the Northern Division, varying in colour from brick dust to dull yellow. 3. Round balls of a dark brown colour, the size of a small orange, from Mangalore, where a large manufacture takes place. These sorts appeared to vary only in shape. The manufacturers from the Acacia catechu work in Burma, Canara, the western Dekhan, Behar, and Northern India. They move to different parts of the country in different seasons, erect temporary huts in the jungles, and, selecting trees fit for their purpose, cut the inner wood into small chips. These they put into small earthen pots, which are arrayed in a double row along a fireplace built of mud; water is then poured in until the whole are covered. After a considerable portion has boiled away, the clear liquor is strained into one of the neighbouring pots, and a fresh supply of material is put into the first, and the operation repeated until the extract in the general receiver is of sufficient consistence to be poured into clay moulds, which are generally of a quadrangular form. Before the extract is quite dry, it is placed in cloths, strewed over with the ashes of cow-dung, cut into small lumps, and again exposed to the sun. This catechu is usually of a blood-red colour, and is considered there to be of the best quality.

Catechu has long been employed in India for tanning skins. Its tanning properties are stated to be so great that skins are tanned by it in five days; but the leather is light, spongy, permeable to water, and of a dark reddish-fawn colour. The light-coloured variety of catechu produces a softer leather than that tanned with cutch. Catechu produces but little of the deposit of bloom which is yielded by oak-bark, valonia, and divi. A pound of catechu is said to be sufficient for the production of about a pound of leather. Bombay catechu or cutch is the richer in tannin; it is of a dark brownish-red colour, internally as well as externally, and of sp. gr. 1.38. Bengal catechu or terra is of a light-brown colour internally; its sp. gr. is 1.28. It has also been used in India to give a brown dye to cotton, and has been very extensively employed in the calico-printing works of Britain. The salts of copper, with sal-ammoniac, cause catechu to yield a bronze colour, which is very permanent. The proto-muriate of tin produces with it a yellowish-brown. A fine deep bronze hue is also produced from catechu by the perchloride of tin, with an addition of nitrate of copper. Acetate of alumina gives a brown, and nitrate of iron a dark-brown. For dyeing a golden coffee-brown, catechu has entirely superseded madder, one pound of it being equivalent to six pounds of that root.

A catechu prepared from the nuts of the Areca catechu is used solely as a masticatory. The nuts, however, yield two astringent preparations, both of which are known as catechu, and both of a very inferior quality. The preparations are respectively called, in Tamil, Katha kambu and Kash katti; in Telugu, Kansai; and in the Dekhan, Khrab katha and Acha katha. Katha kambu is chewed with the betel leaf; the latter, Kash katti, is used medicinally. For preparing this substance, the nuts are taken as they come from the tree, and boiled for some hours in an iron vessel. They are then taken out, and the remaining water is inspissated by continual boiling. This process furnishes kassu, or the most astringent terra japonica. After the nuts are dried, they are put into a fresh quantity of water and boiled again; and this water being inspissated, like the former, yields the best or dearest kind of catechu. Sir H. Davy, in analyzing the dark and pale catechu, or the Bombay and Bengal, as they were called, obtained in 200 parts from

	Tannin.	Extract.	Mucilage.	Insol. residuum.
Dark catechu, 109	68	13	10	
Pale do. 97	73	16	14	

When of good quality, catechu is a more powerful astringent than kino. Catechu is much used in medicine as an astringent and tonic, being usually given in combination with aromatic and earthy substances.—*Simmonds; Malcom's Tr. i. 187; McClell. Repts.; Mad. Exh. Jur. Rep.; O'Sh. Disp. p. 302; Royle; Mat. Med. p. 351; Faulk.; Kerr, Med. Obs. and Inquiries, v.; Hamil. Mysore, iii. See Acacia catechu; Areca catechu; Uncaria gambier.*

CATERPILLAR. Uskul, ARAB.; Chasil, Heb. Some Ceylon caterpillars sting. A greenish one, that occupies the Thespesia populnea (Suriya, Singh), at a certain stage in its growth descends by a silken thread, and hurries away. The moth of this is supposed to be a Bombyx, near Cnetho-

campa, *Stephens*. Another, short, broad, and pale green, with fleshy spines, that feeds on the *Cariassa jasminiflora*, and stings with fury, is of the moth *Necera lepidia*, *Cramer* (the *Limacodes graciosa*, *West*). The larvae of the genus *Adolia* are hairy, and sting with virulence. Many exactly resemble in tint the leaves they feed upon. Others are like little brown twigs; and many are so strangely marked or humped, that when motionless they can hardly be taken to be living creatures at all.—*Tennent's Ceylon*. See Insects; Larva.

CATGUT, in Hindi, *rohda*, of various qualities, is in general use in India for bowstrings, the strings of musical instruments. A kind of rope somewhat resembling catgut is made by the chucklers or tanners of the sinews of animals. It answers tolerably for lathe bands, drill bowstrings, etc. Catgut is imported from Herat into the Panjab.

CATHA EDULIS. *Forsk.* Khat, ARAB. The Abyssinian tea, one of the *Celastraceæ*, grows in Arabia, where its leaves are eaten green, and are supposed to give such increased wakefulness that a man could watch all night. The Arabs carry a twig about with them as an antidote against plague infections. Playfair says it is much used by the inhabitants, furnishing a drug which forms a pleasurable excitant. The leaves and tender shoots, when chewed, are said to produce hilarity of spirits and an agreeable state of wakefulness.—*Playfair's Aden*; *Hogg*.

CATHARTOCARPUS FISTULA. Pers.

Cassia fistula, *Linn.*

Bukbur,	ARAB.	Pykassie,	DUT.
Banner lati-gach'h,	BENG.	Pudding pipe tree,	ENG.
Sondali; Sonalu,	"	Purgir cassia,	"
Gnoo shwoay,	BURM.	Casse fistulense,	FR.
Gnoo gye,	"	Purgir cassie,	GER.
Kakae; Cunari,	CAN.	Gurmalla,	GUJ.
Chang kwo-tsz shu, CHIN.		Amultas; Bhawa,	HIND.

Its Product.

Hwai-hwa-tsing,	CHIN.	Cassia purgante,	PORT.
Polpa di Cassia,	IT.	Suvarnaka,	SANSK.
Dranguli; Tung-guli, JAV.		Ahilla,	SINGH.
Cassia pulpa,	LAT.	Konne; Sarakonne,	TAM.
Bawa; Baya,	MAHJ.	Suvarnamu; Beyla,	TEL.
Mentus,	MALAK.	Sunari,	URIA.
Khyar-i-Chembir,	PERSE.		

The genus belongs to the *Fabaceæ*. This is a tree from twenty to forty feet high, met with up to 4000 feet elevation all over Southern Asia, with a girth of three or four feet, and the height to the first branch ten to fifteen feet. It is uncommonly beautiful when in flower, few trees surpassing it in the elegance of its numerous long pendulous racemes of large bright yellow flowers, intermixed with the young lively green foliage. It bears a striking resemblance to the laburnum. It varies in size in different localities,—in Coimbatore being too small for useful timber, but in Malabar it attains sufficient size to be adapted for the spars of native vessels. The wood weighs 66 lbs. to the cubic foot, is close-grained, red-coloured, heavy, brittle, and of moderate strength; in Coimbatore used for tom-toms. In Ganjam and Gunisur, where it is tolerably common, it is made into ploughshares and rice-pounders. It is common on the hills and plains of Pegu, where it is used for bows, axles of carts, etc. It has long cylindrical pods, from nine inches to two feet in length, internally divided into partitions, each with a flat seed, surrounded by a soft pulp.

Two pounds weight of the fruit yield eight ounces of the concrete pulp, which forms an article of commerce. Its bark is used in tanning. The bark of the root is a strong purge.—*Drs. Wight, Gibson, Irvine, Roxb.* ii. p. 333, *Stewart, Thompson, and Brandis*; *Mr. Rohle*; *Powell*.

CATHARTOCARPUS JAVANICUS. Pers.

The *Cassia Javanica*, or horse cassia, is a native of Java and the Moluccas, with legumes above two feet in length, containing a black cathartic pulp, used in India as a veterinary medicine.—*Eng. Cyc.*

CATHARTOCARPUS NODOSUS. Roxb.

Cassia nodosa, *Burch.* | *Gnu-thei-ni*, BURM.
Remarkable for its large pink-coloured flowers. It is highly esteemed in Bengal, and is found in the Tavoy forests.—*Mason*; *Voigt*.

CATHARTOCARPUS ROXBURGHII. D.C.

Cath. marginatus, *G. Don.* | *Cassia marginata*, *Roxb.*

A highly ornamental tree, in form much resembling the weeping ash. It is a native of Ceylon and of the south of India, frequent in the jungle between Trichinopoly and Dindigul, and is found in Indian gardens. The wood is hard, and handsomely marked.—*Roxb.* ii. p. 338.

CATHAY, a name of Western China.

CATHI or Catti, the *Katheri* of *Diodorus Siculus*, are supposed to be the race which so manfully opposed Alexander. They were then located about Multan, at this period occupied by the Langa race. A portion of them gave their name to Kattyawar, in the Saurashtra peninsula. The Cathi claim descent from the Balla, an additional proof of northern origin, and strengthening their right to the epithet of the bards, Lords of Multan and Tatta. At the time of Alexander's advance they were confined to the country near the Panjnad, and their own traditions fix their emigration from the south-east part of the valley of the Indus about the eighth century. Colonel Tod describes the genuine Cathi as of a fine manly form, open countenance, and independent gait. Captain McMurdo says, a character possessed of more energy than a Cathi does not exist. With an athletic frame, their height often exceeds six feet. They have light hair and blue eyes, evidence of a Scythic origin. Burnes describes the Cathi (or Katti) as a tall, stout, and handsome race. They live in scattered villages, and move their houses from place to place, rearing immense herds of buffaloes and camels, but scarcely ever condescending to cultivate the soil. Their habits are likewise predatory.—*History of the Panjab*, i. pp. 38, 39; *Travels in Western India*, p. 306; *Tod's Rajasthan*, ii. p. 246.

CATODON, a genus of mammalia, one of the *Cetacea*. The species known are *C. colneti*, *C. macrocephalus*, *C. polycyphus*, and *C. australis*. The last is a sperm whale of the ocean near Australia. It is about 35 feet long.

CAT'S EYE.

Chashm-i-maidah,	PER.	Zmilaces,	LAT.
Bel occhio,	IT.	Zmilampis,	"
Beli oculus,	LAT.	Mata-kuching,	MALAY.

The cat's eye gem is chiefly found in Ceylon, but also obtained from Quilon and Cochin, and in the neighbourhood of Madras; also in Burma. Cat's eye is not much valued in India. It is a transparent quartz full of minute fibres of asbestos, and is cut in a highly convex form. It is of a yellow hue, slightly tinged with green, and is often set in rings. In the Moulmein market a small one

may be purchased for two rupees, and one of ordinary size for five, while ten rupees is the highest price given for the best. Ceylon produces the finest cat's eyes in the world,—indeed, the only kind that is highly esteemed, and that bring a high price. The best specimens have been found in the granitic alluvion of Saffragan and Matura.

CAT-SKINS are used chiefly dyed, and sold as false sable. The fur of the wild cat is more esteemed than that of the domestic cat.—*Faulkner*.

CATTI-MUNDUO. TEL. *Euphorbia cattimundoo*, a plant of the Northern Circars. Its sap is highly cohesive, and is used for fastening knives into handles, hence its name.

CATTLE, horned cattle.

Peu, GR. Gai Goru, HIND.
Faihu, OLD HIGH GER. Pecu, IT.
Faihu, GER. Para, SANSK.

This term is applied chiefly to domesticated bovine quadrupeds, oxen and buffaloes, but is often made to include sheep and goats. The gaur, *Gavæus gaurus*, the bison of sportsmen, still remains wild in all the large forests of India, as also does the gayal or mithun, *Gavæus frontalis*, in the hilly tracts to the east of the Brahmaputra and at the head of the valley of Assam. Likewise the buffalo, *Bubalus arni*, of the forests of the Peninsula, as also the yak, *Poephagus grunniens*, of the snowy Himalaya, continue wild; but the domestic buffalo is extensively used both for draught and as milch kine, and its milk is richer than that of the cow. The breed on the Neilgherries is very fine, resembling the wild buffalo; and many along the crests of the Western Ghats and other places are seen with white legs like the gaur. In the Himalaya, the domesticated yak, the Chaori gao, is much used in all the elevated tracts, both as milch cattle and for burden, and breeds freely with the common cattle. Its milk is very rich, and it is the best carriage for rugged hill work, as they can ford a rapid stony torrent in a way that no other animal dare attempt, and can scramble up and down rugged hills in a perfectly wonderful manner.

The taurine group of cattle comprise the zebu or humped domestic cattle, the taurus, humpless cattle with cylindrical horns, and *Gavæus*, humpless cattle with flattened horns, peculiar to S.E. Asia. Small herds of the zebu, in Mysore, Nellore, Oudh, Rohilkhand, Shahabad, and the Doab near Muzaffarnagar, have run wild.

Varieties of the humpless taurus cattle occur in almost every district. Nellore and the Kistna districts produce excellent milch cows, the best of which sell for Rs. 200 to 300, and they stand 15 to 17 hands high. As draught cattle a yoked couple draw 1500 to 2000 lbs. on a fair road. The Nellore breed in Cuddapah are tall, bulky, clumsy, flat-sided animals, but possess great strength.

The Mysore bullock is 12 to 15 hands, and is celebrated as draught cattle, and for their spirit and powers of endurance, and sell for Rs. 70 to 150 each, and Rs. 150 to 200 the pair. This breed furnishes cattle for the Madras gun-carriages and karkhana. The Salem cattle are of this breed. Draught cattle in India are chiefly bullocks, and they are driven from the horns, or by means of the reins led through the nose cartilage. Iago says in *Othello*, 'He will as tenderly be led by the nose as asses are,' indicating that in Shakespeare's time a similar mode prevailed of driving asses. The bulk of the

farmers of India do not find it advantageous to be cattle-breeders, and fodder is not provided.

In the middle of the 19th century, a severe cattle plague carried off vast quantities of cattle in Europe, and shortly after a similar plague in India carried off great numbers. The characteristic symptoms were drooping, cold ears, hair standing on end, frequent weak pulse, running at the eyes and nose, scanty high-coloured urine and purging, terminating in a bloody flux. As the disease advanced the body became covered with pustules, the disease generally proving fatal in a few days; but when the membranes of the brain were affected, the animal died in a few hours with the symptoms of apoplexy.

The bullock and the cow are not of equal value in India. In the parts of the country where the one sex is particularly valuable, the other sex may be of small value. The excellence of the Marwar bullock for draught is proverbial, but we never hear of the Marwar cows' milk. The male of the Gujerat buffalo was esteemed of so little use, that in the early part of the 19th century they were for the greater part not even reared. The males of the Mahoor breed were said to be so fierce as to be useless except for reproduction.—*L.* The male buffalo of the Surat breed is of great size and weight. The milch buffalo of Surat is of great value. Lands bordering upon hills are of comparatively greater value to cattle grazers, over plain districts which are put under the plough. In these the working cattle fall off miserably in the three concluding months of the fair season. There is no grazing; and were it not for the purchased food they get in the house, they would die.

CATTRA-BANGHA. SANSK. *Aristolochia bracteata*.

CATTU. MALEAL. Wild or uncultivated; hence

Cattu-Carua, *Cinnamomum iners*.
Cattu-Casturi, *Abelmoscus moschatus*.
Cattu-Elupa, *Terminalia bellerica*.
Cattu-Pæru, *Phaeolus rostratus*.
Cattu-Siragam, *Vernonia anthelmintica*.
Cattu-Tirpali, *Chavica Roxburghii*.

CATTY or Kati. MALAY. In the Eastern Archipelago and China, a weight equal to 1½ lb. or 16 tale; 10 mace equal to one liang; 16 liang make one catty; 100 catty are equal to 1 pikul, 133½ lbs.—*Wils.*

CATU KAMRIGA RAKTA, dragon's blood.

CATURUS SPICIFLORUS. *Linn.*

Acalypha hispida. | Watta tali, . . . MALEAL.

A plant of Travancore; its flowers are given in diarrhoea in the form of decoction or as a conserve, and its leaves are beaten up with green tobacco leaf and infusion of rice, and applied to inveterate ulcers.

CAUA-THENTHI. HIND. *Clitoria ternatea*.

CAUBUL, a town in Afghanistan, in long. 69° 12' E., and lat. 34° 7' N. See Kābul.

CAUCASIAN, a term applied by ethnologists to a race of which the European is the type, also to a class of languages. In the Caucasian race, there is a fine forehead, high brow and nose, long beard, tall, lithe, powerful frame, and light colour of skin.

CAUCASUS. The main chain of the Caucasus crosses obliquely, from north-east to south-west, the great isthmus which lies between the Black Sea and the Caspian, separating Europe from Asia. The chain extends on a line of more than 1000

miles from the neighbourhood of Anapa, at the entrance of the Sea of Azof, almost in a straight line to Baku and the peninsula of Apsheron jutting out into the Caspian. The crest averages a height of about 11,000 feet. The valleys on both sides are steep and narrow, and the Terck pass, 7977 ft. t. The principal range boasts the gigantic Elburz, 17,746 feet, and Kasibek, 16,516 feet. The heads of these two celebrated mountains are almost always obscured with clouds; and the snow-line on them is 11,000 feet, and cereals grow up to 7000 feet.

The whole of the Caucasian region consists of the old territories of Daghestan and Circassia, north of the main chain, and of the old kingdom of Georgia on the south, to which Russia added at various epochs the Armenian districts of Erivan, Elisavetpol, and Alexandropol, and more lately those of Kars and Batoum. The Caucasus is of importance to Russia as the channel through which her trade can be extended to all parts of Central and Southern Asia, her commercial enterprise rather outstripping than following close her territorial aggrandizement. The Caucasus is like a great wedge thrust between Persia and Asiatic Turkey. It is the highway which is to lead the merchandise as well as the arms of Russia to the shores of the Persian Gulf and the Indian Ocean, sooner than any of her roads or railroads across the Ural, *via* Perm or Orenburg,—sooner than her almost exclusive navigation of the Caspian Sea. The whole of the Caucasian regions is ruled by a Russian lieutenant, residing at Tiflis. It is divided into 12 governments or provinces, exclusive of Kars and Batoum. It has, in round numbers, an area of half a million square kilometres, with a population of 5,000,000. In Tiflis, the capital, out of 104,000 there are at least 20 races of men. Russians muster 30,823; but the Armenians outnumber them by 6787. Next come 22,152 Georgians of various tribes; and the rest is made up of Tartars, Persians, Turks, Jews, Assyrians, and Chaldeans, besides various mountain tribes deemed indigenous, the Ossets, Ingush, Aisars, Khefurs, Leaghians, etc., with 2741 Poles, 2135 Germans, 257 French, 163 Italians, 52 English. With respect to creeds, 52,392 Russians and Georgians belong to the orthodox or Greco-Russian Church; 36,000 are Gregorian Armenians; 871 Armenian Catholics, with 3680 other Roman Catholics; 2177 Lutherans, 1276 Jews, and 4338 Mahomedans. Petroleum, in enormous subterranean lakes and reservoirs, underlies the Caucasian region from sea to sea. It is largely found beneath the steppes both north and south of the mountain chain. At Baku, at its southern end, on the Caspian, naphtha bursts forth in copious springs, sending up tall liquid columns not unlike the geysers of Iceland.—*McGregor's Persia*; *Wheeler's Hist. of India*; *Porter's Travels*, i. p. 152.

CAULIFLOWER. *Brassica oleracea*, var. An excellent vegetable. In the Dekhan the seed should be sown at the latter end of August. Removing the plants occasionally, prevents their quick growth. In England the market gardeners seldom water cauliflowers, and once in four days is amply sufficient in the Dekhan; no injury will accrue even if watered less frequently. In India, white broccoli is often taken for the cauliflower. Broccoli, both red and white, should be cultivated in the same manner as cauliflower.—*Riddell*.

CAUTLEY, SIR PROBY THOS., K.C.B., entered the Bengal Artillery in 1819. He was employed in the field during the years 1820 and 1821, in the reduction of numerous forts in the kingdom of Oudh. In 1825 and 1826 he served at the siege of Bhartpur. He was subsequently employed as a civil engineer on the eastern Jumna Canal in the N.W. Provinces, and was the projector and the executor of the great Ganges Canal Works, which were opened 8th April 1854. He carried on extensive researches, in conjunction with Dr. Falconer, in the fossil remains in the Siwalik hills, and he presented to the British Museum an extensive collection of fossil mammalia from the Panjab. He wrote on a submerged city, 20 feet under ground, near Behut, in the Doab, Bl. As. Tr. 1834; On Fossil Quadrumana, ibid.; Use of Wells, etc., in Foundations, as practised in the Northern Doab; Structure of the Sevallick Hills; Notice of a Fossil Monkey from the Sevallick Hills; Coal and Lignite in the Himalayas; Description of Sivatherium giganteum, the Fossil Crocodile, Giraffe, Glurial, Hippopotamus, Camel, Tiger, and Bear; Gold Washings in the Goomti River, in the Sevallick Hills, between the Jumna and Sutlej Rivers; On a New Species of Snake; Mastodonta dentetroites; Mastodons of Sevallicks; Manufacture of Tar in the Sevallick Hills; Panchukki or Corn Mill; Dam Sluices; Remarks on the Fortress of Ali-gurh; Caranssa Bridge. On leaving Calcutta for Europe, he was honoured with a salute from the batteries of Fort William, and was favourably noticed in the Government Gazette.—*Gleanings of Soc. Beng. As. S. Tr.* 1834; *Parley's Military Repository*, Lond.; *Geol. Soc. Tr.* 1840.

CAUVERY, the Chaberos of Ptolemy, a river of the Peninsula of India, which rises in the mountains of Coorg, 50 miles from Mangalore, in lat. 12° 25' N., and long. 75° 35' E., and, after an easterly course of 472 miles, it disembogues into the Bay of Bengal, receiving the Magnumurthy, 46 miles; Bhawani, 120 miles; Noyel, 95 miles; Seringapatam, Trichinopoly, Tanjore, and Tranquebar are on its banks. It passes through and from Mysore to the coast; at Trichinopoly it forms the island of Srirangam; and a mound at Coiladdy prevents the rejunction of the two forks of the Cauvery and Colerun, and the stream is led into numerous large irrigating channels that are conducted all through Tanjore. The largest of these are the Vettar, the Vellar, and Arselar, all of which enter the Bay of Bengal. Navigable for craft through the low country during the inundation. A waterfall occurs in its course. It is deemed by the Hindus a sacred river, and is called by them the Dakshini Ganga, or Southern Ganges. At its source at Tala Kaveri and at Bhaga mandla, where it receives its first tributary, are ancient Hindu temples which are largely frequented by pilgrims in the Tule-masa (October to November).

The Cauvery drains an area of about 28,000 square miles. The area of its delta is 2760 square miles, and its irrigation system supplies about 835,208 acres, yielding a revenue of Rs. 35,30,336. Its delta has the largest area of artificial irrigation in the Madras Presidency. About 10 miles west of Trichinopoly, the Agunda Cauvery divides at the head of the island of Seringham into two branches, the Colerun and the Cauvery. Colonel Sim and

Sir Arthur Cotton, about 1834-6, constructed a weir across the Colerun, which has given great benefits to the people of Tanjore. The head of the Cauvery branch is 1950 feet wide, and the bed level is regulated by a dam. After a course of 16 or 17 miles, the Cauvery bifurcates into two principal streams, called the Cauvery and the Vennaur, which irrigate nearly equal areas, and which give off numerous branches, and regulating works have been constructed at all the bifurcations. Prior to British rule, the native princes had connected the Cauvery with the Colerun at the east end of the island of Srirangam, about 20 miles from the upper Colerun anicut, and across this channel they had constructed the Grand Anicut. In the northern delta, the whole of the distribution of water has been artificially carried out by canals, but in the Cauvery delta the principal distribution has been effected naturally by the numerous branches thrown off by the Cauvery and Vennaur. The chief work left to be done by the British was to render the water supply more reliable, and this was secured by the Upper Anicut in 1836, at an expenditure of Rs. 1,83,000.

CAUVERYPAK, a place midway between Conjevaram and Arcot. Clive gained a battle here in February 1762, and the place surrendered to him.

CAVA or Kava, also called Ava pepper, is from the *Macropiper methysticum* of the Pacific. Its root produces a stimulating liquor. See Ava.

CAVAGNARI. Major Sir Pierre Louis Napoleon Cavagnari, K.C.B., son of General Adolphe Cavagnari, of a noble Parmese family. He entered the service of the E. I. Company as 'direct cadet,' and served with the 1st Bengal Fusiliers in the Oudh campaign of 1858-59, also with the 3d Gurkhas throughout the Ambala campaign of 1863, and the Hazara campaign of 1868. He received the Victoria Cross, for the daring capture of a band of murderers in connection with the Swat Canal outrage in December 1876, near the English fort of Abazai, where many workmen were killed. He accompanied Sir Neville Chamberlain on a mission to the Amir Sher Ali, and was in advance with a small body of the escort, when he was stopped by the Afghans at Ali Musjid, and compelled to turn back, an incident which was the immediate cause of the Second Afghan War. He accompanied General Sir Samuel Browne as Political Officer, and at the termination of the campaign was appointed Plenipotentiary, and in that capacity negotiated the peace with Yakub Khan at Gundamuk. He and all his guard were killed at Kabul, which led to the re-occupation of Kabul, Kandahar, and Ghazni.

CAVATUM PILLOO. TAM. *Andropogon schoenanthus*.

CAVE. GHAR, ARAB., PERS.; KOO, BURMESE. Chambered rocks occur in many parts of Afghanistan, also in a mountain S. of the Deo Hissar, near Singlah, and are probably of Buddhist origin. The small chambers were intended for the abode of the ascetics of the sect. There are some fine remains of this class in the upper valley of the Urgandab. At Karafu, in the Suj Bolak district of Azarbijan, is a series of ancient caves. There are numerous chambered rocks at Bamian; and the Afridi tribe in the Khaibar pass live in chambered rocks.

CAVE TEMPLES and monasteries of India consist of stupendous excavations and monolithic structures, made for religious and monastic purposes. There are in India at least 1000 distinct caves. Some are opposite Prome in Burma; there are a few in the Madras Presidency; about 900 in the Bombay Presidency; several in the Hyderabad Dominions; also in Orissa, in Behar, in Malwa, in the valley of the Indus, among the mountains of Baluchistan, Afghanistan, and Bamian. In Western India alone, including the Nizam's dominions, there are at least thirty series of cave-temples which have been examined by Europeans. Cave inscriptions discovered are seventeen in number, viz. six about 15 miles from Gya, in Bahar, viz. three in the hill of Barabar, three in the hill of Nagarjuni, nine in the hill of Khandagiri, in Cuttack, and two in Ramgarh in Sirguja.

The *Cave Temples* in the southern part of India are classed by Mr. Fergusson into—

(a) The *vihara* or monastery caves, which consist of (1) natural caverns or caves slightly improved by art. These are the most ancient, and are found appropriated to religious purposes in Behar and Cuttack. Next (2) a verandah opening behind into cells for the abode of priests, as in Cuttack, and in the oldest *vihara* caves at Ajunta. The third (3) has an enlarged hall supported on pillars. The most splendid caves are those of Ajunta, though the Dherwara at Ellora is also fine, and there are some good specimens at Salsette and Junnar.

(b) Buddhist *chaitya* caves form the second class. These are the temples or churches of the series, and one or more of them are attached to every set of caves in Western India, though none exist on the eastern side. Unlike the *vihara*, all these caves have the same plan and arrangement, and the Karli cave is the most perfect in India. All these consist of an external porch or music gallery, an internal gallery over the entrance, a central aisle which may be called a nave, roofed by a plain waggon vault, and a semi-dome terminating the nave, under the centre of which always stands a *dahgopa* or *chaitya*. In the oldest temples, the *dahgopa* consists of a plain central drum, surmounted by a hemispherical dome crowned by a *Tee*, which supported the umbrella of state of wood or stone. These two classes comprehend all the Buddhist caves in India.

(c) The third class consists of Brahmanical caves properly so called. The finest specimens are at Ellora and Elephanta, though some good ones exist also on the island of Salsette, and at Mahabalipur. In form many of them are copies of and a good deal resemble the Buddhist *vihara*. But they have not been appropriated from the Buddhists, as the arrangement of the pillars and position of the sanctuary are different. They are never surrounded by cells, as all *viharas* are; and their walls are invariably covered or meant to be covered with sculpture, while the *viharas* are almost as invariably decorated by painting, except the sanctuary. The subjects of the sculpture of course always set the question at rest.

(d) The fourth class consists of rock-cut models of structural and Brahmanical temples. To this class belong the far-famed Kailas at Ellora, the Saivite temple at Dhumnar, and the Rathas at Mahabalipur. This last is cut out of isolated blocks of granite, but the rest stand in pits.

The Indra Subha group at Ellora should perhaps form a fifth.

(c) The fifth or true Jaina caves occur at Khandagiri in Cuttack, and in the southern parts of India, but are few and insignificant. In the rock of Gwalior Fort there are cut in the rock a number of colossal figures, some 30 to 40 feet high, of one of the thirthankara, some sitting, some standing. Their dates are about the 10th or 12th century before Christ.

The greater number of the viharas seem to have been grouped around structural topes. Their façades are generally perfect. Nine-tenths occur in S.W. India, in the Bombay Presidency, with a group in Behar, another in Cuttack, one at Mahabalipur, and two or three in the Panjab and Afghanistan. Asoka, B.C. 250, excavated the first of these in Behar, at Rajagriha, and till the 8th century they continued to be excavated by Buddhists, Hindus, and Jains. It is in Behar that the oldest caves have been found, in the neighbourhood of Rajagriha, which was the capital of Bengal at the advent of Buddha; and one, a slightly improved natural cave, the Satapanni, is said to be that in front of which the first convocation was held B.C. 543.

The most interesting group is at Barabar, 16 miles N. of Gaya. An inscription on the Karua Chopra cave there, records its excavation in the 19th year of Asoka (B.C. 245). Another, called Sudama or Nigope, bears an inscription by Asoka in the 12th year of his reign. The Lomas Rishi is an interesting cave, as also is the Milkmaid's cave, which is probably the most modern, as it was excavated by Dasuratha, grandson of Asoka. Their dates appear to range from B.C. 260 to 200. The rock in which they are excavated is a hard, close-grained granite.

Chaitya halls have also been excavated in several of the rocks of Western India. The oldest of these has been excavated at Bhaja, four miles south of the great Karli cave in the Bhor Ghat. It is supposed to have been before the Christian era. Another group is to be seen at Bedsa, 10 or 11 miles south of Karli, which has two pillars with capitals, surmounted by horses and elephants, and more like the Persepolitan than any others in India. A third chaitya cave is at Nasik, and an inscription over its doorway states that it was the gift of a citizen of Nasik, in the reign of Krishna, one of the Andrabritya kings, who reigned just before the Christian era. Another inscription under the pillars states it to have been excavated in honour of Badrakaraka, supposed to have been the fifth king of the Sunga dynasty, B.C. 129.

Karli, on the road between Bombay and Poona, has the largest, finest, and most complete of the chaitya caves. Inscriptions ascribe its excavation to the Maharaja Bhuti or Deva Bhuti, who reigned B.C. 78.

There are four chaitya caves in the Ajunta group. The oldest and lowest down, No. 9, is 45 feet by 23 feet in width. The next, No. 10, higher up, is 94½ by 41½ feet internally. A third is cave No. 19, and in it Buddha in all his attitudes is introduced everywhere. Hitherto in all sculptures mortal men and women had been absent, and Buddhism was a pure theism or atheism, but at the date of this cave Buddhism has become changed into an overwhelming idolatry.—*Fergusson*, p. 124.

The last chaitya of Ajunta (No. 26) was excavated about the year A.D. 600.

At Ellora, the celebrated Viswakarma cave is a chaitya. Its age also is about the year A.D. 600. It is 85 feet by 43 feet.

The Kenheri cave, on the island of Salsette, in Bombay harbour, is 88½ feet by 39 feet 10 inches, and was excavated about the early years of the 5th century, when Fa Hian was travelling in India. It is a literal and a coarse copy of the Karli cave.

At Dhumnar, about halfway between Kotah and Ujjain, are a series of about 60 or 70 caves, cut in coarse laterite conglomerate. One is a chaitya cella, in the midst of a vihara; its date probably is the 6th century A.D.

At Kholvi, not far from Dhumnar, is the most modern group of Buddhist caves in India. One called Arjun's house is a highly ornamented digoba. Inside is a cross-legged seated figure of Buddha. The only excavation here is a chaitya hall 26 feet by 13 feet.

Some of the viharas were three or four storeys in height, and containing up to 1500 cells, as at Mahabalipur, 30 miles south of Madras, and at Nalanda, 7 miles north of the old capital of Rajagriha, and 34 miles south of Patna, at which, in the first century, Nagarjuna resided. In Hiwen T'sang's time 10,000 priests and neophytes resided here; religion and philosophy were taught from a hundred chairs, and that pilgrim resided there as a student for five years. He says there were thousands of viharas, but none equal to this. It was to Central India what Cluny and Clairvaux were to France in the middle ages. Some at least of the many viharas, as that cleared out by Captain Kittoe and Mr. Thomas, seem to have been destroyed by fire.

On the western side of India, viharas have been described at Ajunta, near Aurangabad, at Bagh on the Tapti, at Bedsa, Bhaja, Dnaseo or Darasinha, Ellora, at Hazar Kotri in the Nizam's territories, at Junir, halfway between Nasik and Poona, and at Salsette. At Nasik are three great viharas, the oldest that of Nahapana, A.D. 100; next, Gautamiputra, A.D. 300; and the third, Yadnyasri, A.D. 400. They are a purely Buddhist group. The façades of the first and second are richly ornamented, and were formed during the rule of the Andhrabritya dynasty. At Ellora numerous viharas are attached to the great Viswakarma chaitya. The great vihara is known as the Dherwara, 110 feet by 70 feet. In the sanctuaries of most of these caves are figures of Buddha. In the Das Avatara the sculptures are all Brahmanical.

In the neighbourhood of Peshawur, there are monasteries at Jamalgi, Takht-i-Bahi, Shah Dehri, and Sahri Balol. The sculptures and architecture are highly classical,—Ionic pillars, Corinthian capitals; and some antiquaries regard them as acquired from the Bactrian Greeks, while others attribute them to western influence after the age of Constantine. There are many figures of Buddha, and numerous other figures with nimbus or glories or circular discs at the backs of their heads; they are on the base of the altars or stupas, on the walls and in the cells.

The Brahmanical caves of India were excavated after those of the Buddhist and Jains. The more prominent are as follow:—

1. Saiva cave at Aihole, in the Kaladgi district, S. of Bijapur, A.D. 500 to 550.

2. Badami caves, one Saiva and two Vaishnava, A.D. 550-579.
3. Karusa caves, between Ausa and Kalyana in the Hyderabad territory, A.D. 500-700.
4. Amba Jogi Saiva cave near Mominabad and Bhamburde cave near Poona, A.D. 550-600.
5. Dhokewar, between Junnar and Ahmadnagpur, A.D. 550-600.
6. Rameswara cave at Ellora.
7. Ravana ka Khai and Das Avatara at Ellora, A.D. 600-700.
8. Damar Lena and Ellora caves, N. of Rameswara, A.D. 650-725.
9. Mahavallepur Ratha, S. of Madras, A.D. 650-700.
10. Undavalli, Vaishnava cave on the Krishna at Bezwar, A.D. 650-700.
11. Elephanta, Jogeswari, and Mandapeswari caves near Bombay, A.D. 725-775.
12. Patur in Bera, Rudreswara, near Ajunta, Patna in Kandesh, and caves near Satara, A.D. 700-800.
13. Kailasa monolithic Saiva temple at Ellora, A.D. 725-800.
14. Dhumnar Brahmanical caves, A.D. 750-800.

The *Behar caves* are in the neighbourhood of Rajagriha. The Milkmaid's cave and Brahman Girl's cave have inscriptions in the Lat character. They are of about 200 B.C., and are the most ancient caves of India. The Nagarjuni cave and Haft Khanch or Satghur group are situated in the southern arm of the hill at some little distance from the Brahman Girl and Milkmaid's cave. Another group is the neighbouring Karna chapara and Lomas Rishi cave.

The caves of Udyagiri and Khandagiri hill, about 20 miles from Cuttack, and 5 from Bhuvan-eswara, are next in antiquity to those of Behar. They are built on the hills of Udyagiri and Khandagiri. The former are Buddhist and the older; the latter, probably, are Jaina. Many of the inscriptions are in the Lat character, and this gives their age as anterior to the Christian era. The frieze sculpture in the Ganes gumptha is superior to any in India, and resembles that of the Sanchi tope at Bhilsa. In it there are no gods, no figures of different sizes, nor any extravagance. On the Buddhist caves here, there are no figures of Buddha, or any images. In a Jaina cave in Khandagiri, the twenty-four thirthankara, with their female energies, are sculptured.

The *Ajunta* are the most complete series of Buddhist caves in India, without any mixture of Brahmanism, and contain types of all the rest. They are in a ravine in the ghat south of the Tapti. At Baug, also in a ravine or small valley in the ghat, on the north side of the valley of the Tapti, are three ancient Buddhist caves.

Those of *Karli* are not so extensive as the Ajunta, but still purely Buddhistical, and containing the largest and finest chaitya cave in India. Karli is about halfway between Poona and Bombay on the right-hand side of the valley as you proceed towards the sea.

The *Salsette* or *Kenheri* caves in the island of Salsette are also purely Buddhist, but very inferior to the former. The Kenheri caves are excavated in a hill situated in the midst of an immense tract of forest country, and Mr. Fergusson supposed their date about the 9th and 10th century of the Christian era. The monastic system of the Buddhists has its finest illustration in the series of dormitories, chapels, halls, and temples at Kenheri.

Dhumnar, about 40 miles south-east from Nemuch, but close to Chundivassa, contains

Buddhist caves with a Brahmanical rock temple behind.

The *Ellora* caves are excavated in a porphyritic greenstone or amygdaloid. The Kailas at Ellora is a wonderful work of art—is a small hill cut into a temple. The caves of Elephanta overlook the harbour of Bombay. The Elephanta caves are cut in a harder rock than those at Ellora. Those of Dhumnar and Ellora contain a strong admixture of Brahmanism, and those of Elephanta are entirely Brahmanical, though perhaps of the same age as those of Ellora.

The *Orissa cave temples* are in two isolated hills of sandstone rock, about 20 miles from Cuttack, and 5 from Bhuvan-eswara. The oldest are in the hill called Udayagiri, the more modern in that portion called Khandagiri. They became Jaina about the 10th or 11th century, and at the close of the 18th century a Jaina temple was erected in Khandagiri hill. The oldest cave is called Hat'hi Gumptha. The Aswatama rock near by has on it a copy of Asoka's edicts; and there is another at Aska, near the N. end of the Chilka lake. They are supposed to have been excavated about the time of Asoka. Another natural cave is stated in an inscription to be that of Chulakarna; and others the Pawan Garbha, Jodev Garbha, the Ganesha, Ananta Garbha, and the Rani Gumptha. In the last-named the sculptures represent hunting scenes, fighting, dancing, drinking, and love-making. The sole emblems which can be regarded as Buddhistic are the swastika, the trisul, and shield.—*Fergusson*, pp. 105, 132, 143; *Fergusson and Burgess*, pp. 403, 484; *Cunningham's Archaeological Report*.

CAVIARE.

Caviar; Caviar,	FR.	Ikra,	Rus.
Kaviar,	GER.	Caviario,	It., Sp.
Caviale,	IT.		

Caviare, a substance prepared in Russia, consisting of the salted roes of large fish. The best, which is made from the roe of the sturgeon caught in the Volga, in the neighbourhood of Astracan, appears to consist entirely of the eggs. It is packed in small kegs, and exported; but the inferior sort is made into the form of dry cakes. It is highly esteemed in Russia, and also forms an article of considerable export,—30,000 barrels having been exported from Astracan in a single season. The manufacture consists in separating the roe from its membranes, then washing in vinegar or white wine, and drying by spreading it out on a board in the air. Salt is then well rubbed in, and it is next put in a bag and the liquor pressed out. It is then packed in kegs for sale. During the three annual seasons of fasting in Russia, the consumption of caviare is very great, as it is also in Italy during the fasts of the church. It is eaten on bread, with oil and lemon juice or vinegar. Professor Rawlinson says caviare was known to the Greeks as *Tarichos anta-kaion*. The sturgeon of the Borysthenes, according to Herodotus, were called *Antacæi*.—*Tomlinson*, 354.

CAWA-ARANG. MALAY. A light brown or pale brown coloured wood of Penang, from a very large tree; used for furniture and ornamental work.—*Frith*. (Qu. Kayu Arang.)

CAWNEE, from Kani, KARN., TAM., TEL. In Cuttack, a hand's-breadth. In the south of the Peninsula of India, a land measure. At Madras the standard cawnee is 24 manai or grounds, each

of 2400 square feet. The cawnee is therefore 57,600 square feet = 1.322 of an English acre. Another measurement, however, makes it somewhat less than an acre. The cawnee, in several districts in the Madras Presidency, is subdivided into 100ths; and in the re-survey of the southern districts of Madras, the decimal subdivision of the acre has been authorized. — *Wilson*.

CAWNPORE or Cawnpur, a large cantonment and town in the Allahabad division, situated on the right bank of the Ganges, in lat. 26° 28' 15" N., and long. 80° 23' 45" E., and 580 feet above the sea. Its civil population is about 112,000, and is 685 miles from Calcutta by rail. It gives its name to the district of Cawnpur in the N.W. Provinces of India, in the Doab, a great alluvial plain between the Ganges and the Jumna. The district is bounded on the N.E. by the Ganges, on the S.W. by the Jumna, on the N.W. by Etawa and Farrakhabad, and on the S.E. by Futtchpur, and extends between lat. 25° 55' and 27° N., and long. 79° 34' and 80° 37' E. A small colony of Chinese settled in Cawnpur, and introduced a manufacture of leather, for which the town was long famous. During the mutiny of the Bengal army, on the 26th June 1857 Cawnpur capitulated to the rebels under Dandhu Punt Nana Rao, under promise of safe escort, but the garrison, under General Wheeler, were all destroyed; and on the 15th and 16th July, all their wives and children were destroyed and thrown into a dry well. In and above the well at the entrenchment, and in the well of the slaughter-house, lay the bones of no less than 420 civilians, military officers, and their wives, 400 private soldiers and their wives, and musicians, besides infants. If to these be added the Futtchghur party and those who perished outside the entrenchments, there were not less than a thousand Christians, the majority of whom were murdered in cold blood by order of Nana Rao. Seven Christian men, including Delafosse and Thomson, twelve women and six faithful natives, who entered the entrenchment, alone ultimately escaped. Nineteen Christians and five children, who remained in Cawnpur, escaped by aid of the natives, besides a few drummers. Nana Rao seems to have died in the forests of Nepal. Cawnpur was retaken by General Havelock on the 17th July 1857. On the 15th July General Havelock fought the battles of Aung and Pandu Nadi; on the next day took Cawnpur by storm; on the 17th and 18th recovered the city; and on the 19th took and destroyed Nana Rao's palace at Bit'hur. On the 27th November the Gwalior mutineers and others took possession, but Lord Clyde retook it next evening, and on the 6th December he routed them with great loss. The district was pacified after the fall of Kalpi in May 1858. The district is essentially Hindu. Of the total population, 1,156,055 in 1872, the Brahmans, Rajputs, and Banyas numbered 313,278 souls; the Kayasth, 15,169; the Ahir, 113,053; the Kurmi, 58,359; the Chamar, 122,932; the Mahomedans of the Sunni sect being only 64,797 souls. — *Imp. Gaz.*

CAYENNE PEPPER.

Filfil-ahmar, . . .	ARAB.	Lall mirch, . . .	GUJ., HIND.
Tabia,	BALI.	Peperone commune, . . .	IT.
Muncshena, . . .	CAN.	Lombok,	JAV.
Ta-tsiau-moh, . .	CHIN.	Chabai; Chabe, . . .	MALAY.
Poivre d'Espagne, .	FR.	Lombok; Lada mera, . .	
Spanischer Pfeffer, .	GER.	Lada china,	

Filfil-i-surkh, . . .	PERS.	Miallaghai, . . .	TAM.
Brahu maricha, . .	SANSK.	Mirapa-kai, . . .	TEL.
Gas-miris,	SINGH.		

The powder of the dried pods of different species of capsicum, used as a stimulating condiment. See Capsicum.

CAY-HAUNG. CHIN. *Gossypium Indicum*.

CAY-KHE. COCH.-CHIN. Millet. Cay-khoica, *Aristolochia Indica*. Cay-me, tamarind. Cay-tan-yen, limes. Cay-vang-dee, sassafras.

CAYLEY, Dr. HENRY, a Bengal medical officer who entered the service in January 1857. In May 1867 he went to Leh in Ladakh as Political Agent, in the territories of the Maharaja of Kashmir, to protect and encourage commercial intercourse through Ladakh between India and Central Asia, and watch political events in Central Asia and Eastern Turkestan.

CAZI, a Mahomedan judge, religious and civil.

CEDAR, the sarwat of Arabia, is a commercial term given to the woods of several distinct kinds of forest trees, the timbers of which are distinguished as red and white cedar, Barbadoes and Bermuda cedar, cedar of Lebanon, pencil cedar, bastard cedar, etc., some of them growing in America, some in Europe, and some in Asia. The cedar of Lebanon, so often noticed in Scripture, is usually supposed to be *Pinus cedrus*, called *Cedrus Libanus*, or cedar of Lebanon. The lofty deodara, a native of the Himalayas, with fragrant and almost imperishable wood, and often called the Indian cedar, has been sometimes referred to the genus *Pinus*, and sometimes to *Abies*, *Cedrus*, or *Larix*, with the specific name of *deodara*; and Dr. Hooker is of opinion that the deodara and the cedar of Lebanon are identical. The cedar wood of Scripture is supposed to be the sandarach tree, *Thuja articulata*. The woods of several of the coniferae are called cedars. In India, the term bastard cedar is applied to the *Guazuma tomentosa*; and the *Hymenodictyon excelsum*, *Chickrassia tabularis*, and *Cedrela toona* are all called cedars. In New South Wales the term white cedar is applied to *Melia azadirach*, and red cedar to that of *Flindersia Australis*. In China, a kind of cedar, probably a cypress, called Nan-mah, or southern wood, which resists time and insects, is considered peculiarly valuable, and is especially reserved for imperial use and buildings; and the cedar wood of Japan, according to Thunberg, is a species of cypress. The cedar of Guiana is the wood of *Icica altissima*. The white wood or white cedar of Jamaica is *Bignonia leucoxydon*. The word 'cedar,' in the United States, is applied to various genera of the pine family. The white cedar of the southern swamps is a cypress; the wood of *Juniperus Virginiana* is called red or pencil cedar, that of *J. Bermudiana* is called Bermuda cedar, and that of *J. Barbadosensis* is called Barbadoes cedar, while the juniper of the north of Spain and south of France and of the Levant is from *J. oxycedrus*. The white cedar of North America, a less valuable wood than the red cedar, is yielded by *Cupressus thyoides*. The cedar of New Zealand is *Hartighsea spectabilis*. The cedar of the Amazon is from the *Cedrela odorata* of Von Martius. Under the term cedar, Colonel Frith described a reddish-coloured wood of Palghat, specific gravity 0.507, as a large tree, wood aromatic and used for furniture; and under the name of cedar-root he mentioned a very

aromatic wood, used for ornamental furniture in Palghat. These two are possibly from the Cedrela toona. The wood of the cedar of Lebanon, as now met with, is not in much esteem; but that of the Cedrus deodara of the Himalaya really possesses all the good qualities for which those of Lebanon were praised. Specimens of the wood of the Indian cedar, Cedrus deodara, and of the cypress, Cupressus torulosa, from the Himalayas, were shown by Dr. Royle at the Exhibition of 1851; the former has been introduced into England as a beautiful ornamental tree, but appears to promise well as a useful timber tree, as the wood works well and freely. The bastard cedar are woods of Cedrela toona, Roxb., and of Guazuma tomentosa, Kunth; and the Goa cedar is the Cupressus Lusitanica.—*Faulkner*; *Dr. Hooker*; *Holtzapfel*; *McCulloch*; *Williams' Middle Kingdom*, p. 275; *Burton's City of the Salt Lake*; *Harris, Nat. Hist. of Bible*.

CEDED DISTRICTS, a territory under the Madras Presidency, in the centre of the Peninsula, now apportioned into the Bellary, Cuddapah, and Kurnool collectorates. This tract of country belonged to the Mysore sovereign Tipu, and after his death fell to the share of the Hyderabad state. Shortly afterwards, under the treaty of 1803, this share was ceded to the British on their undertaking to provide a subsidiary force of about ten thousand soldiers. Their numbers in 1868 did not exceed 5000, stationed at Secunderabad, six miles from Hyderabad, in the Dekhan. There is one large military cantonment at Bellary, and a sanatorium, 37 miles distant, at Ramandrug. The people of the districts are partly Canarese, partly Teling, the linguistic boundary being a little east and south of Bellary. The minerals are iron ore, lead, antimony, manganese, diamonds, alum, muriate of soda, natron or native soda, saltpetre, gun-flints, and marble. The same term is applied to the districts ceded in 1801 by the Nawab Vizir of Oudh, which now form the eastern portion of the N.W. Provinces, and include Allahabad, Azimgur, Farrakhabad, Etawa, Gorakhpur.—*Newbold*.

CEDELFACEÆ, the toon-tree tribe of plants, comprising the genera Cedrela, Chickrassia, Chloroxylon, Flindersia, Soymida, and Swietenia; several species of these grow in the East Indies. Besides the species of Cedrela below, Kurz names Cedrela multijuga of Pegu.

CECRELA ODORATA. *Macfadgen*.

Ch'un-shu, Chu-pi, Hiang-ch'un, Chum-pi, . . . CHIN. A timber tree of China; its wood resembles mahogany, and is used in cabinet work. The bark of the trunk and root and the fruit are used internally as an astringent. The tender spring leaves are eaten, and the silkworm is fed upon them, and also on the leaves of the alanthus. The leaves are mixed with those of the catalpa, and made into a wash as a remedy for baldness, and they are taken internally as an antiscorbutic. The timber is particularly recommended for wainscoting rooms, and for chests and the inside work of clothes presses and drawers, from the circumstance that vermin are not known to breed in it, and for splitting into shingles to cover houses. They are very durable.—*Macfad.*; *Smith*.

CECRELA SERRATA. *Royle*.

Hill toon, . . . ENG. | Drava, Drawi, . . . PANJ.
Tuni, . . . HIND. | Drab, Dimri, . . . "

This tree is found in most of the valleys of the

N.W. Himalaya, in Kulu, Kanawar, the Murree Hills, Kangra, and Kaghan, from 4000 to 8000 feet above the sea, up to near the Indus. Its wood is often very red, and has a strong fetid smell when fresh; it is lighter and of more open texture than C. toona, for which it is often sold. It stands water well, is well suited for bridges, and is made into sieves. A cubic foot weighs 31 lbs.—*Dr. Cleghorn, Panj. Rept.*; *Stewart, Panj. Plants*; *Powell, Handbook*.

CECRELA SINENSIS. *A. de Jussieu*. An elegant tree of Europe and China; wood like that of Cedrela toona, Roxb., used for cigar boxes.—*Mueller*.

CECRELA TOONA. *Roxb. Toon*.

C. hexandra, Wall. in Roxb.

Tunna, Toon, BENG., SANS.	Toon tree, . . .	ENG.
Kooruk, . . . BOMBAY.	Toona, . . .	HIND.
Thit-ka-do, . . . BERM.	Kooruk, . . .	MAH.
Tunda, . . . CAN.	Wunjoeli maram?	TAM.
Sauola mara, . . . "	Nandi, . . .	TEL.

This large and valuable tree grows at the foot of the Himalayas, and to the south, in Bengal and both Peninsulas of India, in varying abundance. Abundant 25 miles north-east of Trevandrum; is found in the Mysore and Salem jungles in large quantities; also along the crest of the ghats from Travancore to Goa. In Coimbatore it is a valuable timber tree of large size. In the races of S. Konkan and Lower Canara, the tree is more common. It grows abundantly in some of the deep ravines in western Kandesb, and it grows in the ravines of the Konkan. At the Tanbur river, in East Nepal, Dr. Hooker measured a toon tree (Cedrela) 30 feet in girth at five feet above the ground. The wood is a choice one for cabinet purposes, but is not used for any others, except for house beams when it is procurable in sufficient quantity. It is called bastard cedar from an aromatic resin exuding from it, resembling that of the American cedar. It is often sold in Madras under the general name of Chittagong wood, and is the most valuable of the woods known by that commercial name,—the true Chittagong wood, however, being *Chierassia tabularis*. Cedrela toona has an erect trunk of great height and size, with smooth grey bark. The flowers are very numerous, small, white, and fragrant, like honey. The seeds are numerous, imbricated, winged. It seems probable that the trees known commercially as toon are at least different species; but the woods sold under this name are all red-coloured, of varying hues. The Gumsur Mahalinbo wood, said to be this tree, and to be tolerably common, is described as not liable to be attacked by insects, and is on that account used for making boxes, etc. The fruit and bark are used medicinally in fever and rheumatism. The bark is powerfully astringent, but not bitter; native physicians use it in conjunction with the powdered nut of the *Cassalpinia bonducella*, an intense bitter. M. Nees von Esenbeck has published an account of some experiments on the bark, which indicated the existence of a resinous astringent, a brown astringent matter, and a gummy brown extractive matter resembling ulmine. The bark was used in Java by Blume in epidemic fevers, diarrhoea, and other complaints. Horsfield gave it in dysentery, but only in the last stage, when inflammatory symptoms had disappeared. Its flowers, in conjunction with

safflower, are used by the inhabitants of Mysore for dyeing the beautiful red colour called there Gul-i-nari. A cubic foot weighs 28-41 lbs.—*Drs. Roxburgh, i. 635, Hooker, Mason, Gibson, Cleghorn, Stewart; Beddome; Voigt; Powell.*

CEDRUS DEODARA. Lambert. Deodar.

Pinus deodara, Roxb.

Sacred Indian fir, . . .	ENG.	Kelu, . . .	HIMAL.
Himalayan cedar, . . .	"	Kilei, Killar, . . .	"
Devadara, . . .	HIND.	Kelmung, Keling, . . .	TIBET.

Cedrus deodara is a magnificent tree growing on the mountains of Kedar Kantha, Nepal, and Tibet, up to heights of 7000 and 12,000 feet; as also in the woods of Almorah, at Kullu, Kangra, and Kaghan. The resinous wood is very durable, lasting from 200 to 400 years. The tract in the Sutlej valley producing deodara lies between long. 77° 59' and 78° 31' E., and lat. 31° 23' and 31° 40' N. (*Panj. Rep. p. 4*). The deodara is not abundant in Hazara (except in Kaghan), and is becoming scarce. Dr. Cleghorn only observed it on the north side of the Mochipura range, towards the Jhelum, and sparingly on Thandiani. Mr. Strong measured a deodara tree in the deodar forest at Nachar after felling, 122 feet long, the butt end girth 14 feet 6 inches, and the top 12 feet 4 inches; another standing about 150 feet high, girth at bottom 18 feet 4 inches. Some he measured 26 feet in girth. The average, taking the whole forest, is not less than 15 feet girth at bottom. The trees are full of turpentine. *Cedrus deodara* timber is very useful for railway purposes, and 12,000 tons were sent down the Chenab in one year. Deodara was abundant in Bussahir. In the territories of Mandi and Sukhet, and in the hill states of Koti Kamharsen, and Bagri, which overlook the Lower Sutlej, all the good deodar trees (Kelu) have of late years been removed from within three miles of the river; but the interior hills of Bussahir are extensively clothed with the finest deodara, particularly on the upper parts of the northern slopes, commencing at Nachar, and terminating near the Hangarang ridge, which forms the northern limit of this beautiful tree, and indeed of all arboreous vegetation, except birch and junipers. In travelling along the Hindustan and Tibet road, many cedars may be seen 20 feet in girth, and 100 to 130 feet in height. It is supposed to be identical with the cedar of Lebanon. Its wood is fragrant, of a reddish-yellow colour, highly resinous and inflammable; very durable; yields valuable timber, not subject to warp. The natives of the hills venerate the groves surrounding their temples and religiously conserve them, whilst to the State the wood is of the greatest importance for house and bridge building.—*Eng. Cyclop.; Cleg. Rept. on Panj.; Kulu and Kangra, pp. 4 to 190; Hook. Him. Journ. ii. p. 41; Hodgson's Nagasaki, pp. 342-3; Royle's Ill. Him. Bot. p. 350; Powell; Gamble.*

CEDRUS LIBANI. Barr. Cedar of Lebanon, a native of Lebanon and Taurus; attains to 60 or 100 feet in height. The largest in the latter part of the 19th century measured thirty feet in diameter, and covered a circumference of about 120 feet. Their number has gradually been diminishing. In 1550 Bellon reckoned 30. In 1600 only 24 remained. In 1650 only 23. In 1700, 16; and in 1800, 7; and these seven trees are perhaps the sole witnesses from biblical times. The cones of the deodara are identical with those of the cedar

of Lebanon; the deodara has generally longer and more pale bluish leaves and weeping branches, but these characters seem to be unusually developed in English gardens; for several persons, well acquainted with the deodar at Simla, when asked to point it out in the Kew Gardens, have indicated the cedar of Lebanon, and when shown the deodar, declared that they never saw that plant in the Himalaya. *C. Atlantica, Manetti*, is the Atlas cedar.—*Hooker's Him. Journ. p. 41.*

CELASTRACEÆ, spindle trees. The English name is derived from the use made of its very compact wood. In India the genera of this order are *Celastrus*, *Elæodendron*, *Eucyninus*, *Kurrimia*, and *Microtropis*, with the sub-orders *Hippocratea* and *Trigoniceæ*. *Celastrus spinosus, Royle*, is a thorny shrub.

CELASTRUS EMARGINATUS. Willd. Chennee chintoo, TEL. This shrub, which grows on the Coromandel coast, makes good fences and fuel.—*Roxb. i. 622.*

CELASTRUS MONTANA. Roxb.

<i>C. paniculatus, Wight.</i>	<i>C. Senegalensis, Lam.</i>
Malkanguni, . . . HIND.	Gaja Chinnu, . . . TEL.
Kanguni, . . . MAHR.	Gi-changi, . . . "
Danti chettu, . . . TEL.	Pedda danti, . . . "

A scrubby, crooked shrub, found on the Coromandel coast and in barren hills, chiefly of the Dekhan. The wood, hard and durable, is sought after as a choice dunnage for roof tiles, said to last for forty years, a duration greatly exceeding that of any other dunnage material.—*Roxb. i. 621; Gibson; Voigt; Rohde.*

CELASTRUS PANICULATUS. Willd.

<i>C. nutans, Roxb.</i>	<i>Ceanothus paniculatus, Heyne.</i>
<i>C. Rothmann, Schultes.</i>	<i>Scutia paniculata, Don.</i>
Staff tree, . . . ENG.	Bavungi, . . . TEL.
Malkanguni, . . . HIND.	Gunda moda, . . . "
Valuluvy, . . . TAM.	Maneru, . . . "
Mal kang kanni, . . . "	Mai erikata, . . . "
Mal-e-rikata, . . . TEL.	Maiyala orikat, . . . "

A large scrambling shrub, grows in most parts of India. The red seeds are given to cattle, and are officinal, being considered hot, and administered for rheumatism. The leaves also are officinal; and a deep scarlet-coloured oil, obtained by expression from the seeds, is rubbed externally and given internally in rheumatism. The oleum nigrum, an empyreumatic black oily fluid, is obtained by the destructive distillation of the seeds, but it does not differ in any sensible degree from the empyreumatic products of the distillation of the common fixed oils, containing naphtha and other carburets of hydrogen. Large quantities would doubtless yield paraffin and creosote. The seeds have a hot biting taste; and the oleum nigrum obtained from them was at one time largely employed in Beriberi. In Ajmir the seed is imported from Marwar and Godwar; is there considered sudorific, and generally heating, and is swallowed whole in rheumatism. It is used in horse mescalids.—*O'Sh. p. 271; Gen. Med. Top. p. 146; Dr. J. L. Stewart; Malcolmson, p. 312; Gamble.*

CELEBES is called by the natives Wugi. It is an island in the Eastern Archipelago. In configuration it has been compared to a star-fish, from which the radiating limbs on one side have been removed; and this very singular form also distinguishes Gilolo, an island not far distant from it to the eastward. Celebes occupies the centre of the tropical zone, and lies in the Molucca sea. It is

composed of four peninsulas, with an area of 3578 miles. Its coast presents a great number of bays, gulfs, and capes of eccentric outline. The surface is lofty, with considerable hills, and towards the north are several active volcanoes. Some of the mountains rise 7000 feet above the level of the sea, usually with round or flat tops. Along the borders of the sea are wide plains covered with verdure; and beautiful valleys, some of which enclose magnificent basins of limpid water, raised on a smooth plateau, encircled by a rim of low hills. Thick forests cover the hills and large tracts of the level country with oaks, maples, sycamores, cedars, teak trees, and the upas. Two southern prongs form the Gulf of Boni, which stretches three degrees northward into the centre of the island. Its entrance is about 80 miles wide, but narrows to 30 miles, till at its head it again expands to 45 miles. Celebes, on its eastern coast, is fronted by islands; and many islands are scattered over the bays of Tolo, and Tominie, or Gunong Tella. Celebes, on its north coast, is in general high, bold land. Its extreme point is called Cape Coffin; and the whole of the islands that stretch from it to Menado Bay are sometimes called Banca islands. The tongue of land in the north of Celebes, known administratively under the name of the Dutch Residency of Menado, comprehends all the northern extent of the island, from the bay of Palos in the west to the cape of Taliabo in the east, and comprises the great bay or arm of the sea of Gunong Tella, which stretches in a westerly direction between the two peninsulas. The Residency of Menado includes under its jurisdiction the whole federative states of Minahassa; the small kingdom of the northern coast; also the very extensive districts in the west part of the peninsula, where Government exercise sway, besides the islands of Sangir and Talaut to the north, as well as the lesser island of the west coast and the large gulf of Tomini. In 1842 its population was estimated about 180,000 souls, exclusive of the Alfura race. In 1881 it was 379,795.

In the S.W. Peninsula, two languages are spoken, the Mangkasa or Mangkasara (which gives its name to the Netherland capital Macassar), and the Wugi or Bugi, which originally was more particularly limited to the coast of the Gulf of Boni. North of Macassar, in the most western part of the island, is another people, the Mandhar, who speak a third language. On the island of Buton, which may be regarded as a part of the Peninsula east of the Gulf of Boni, a fourth tongue is spoken. In the northern Peninsula are the people speaking the Gorontalo and the Menado languages (Bikmore, p. 97). Minahassa is in the northern extremity of Celebes. In the interior are a people whom the coast tribes call Turaju, who are said to be cannibals and head-hunters (Bikmore). Macassar is the most notorious place in the Eastern Archipelago for the Bugi people to run amok. It is in fact the national mode of committing suicide amongst the natives of Celebes, and is therefore the fashionable mode of escaping difficulties. Ten or twenty persons are sometimes killed and wounded at one of the amok. Stabbing and killing all he meets, the amok runner is at last overpowered, and dies in all the excitement of battle. It is a delirious intoxication, a temporary madness, absorbing every thought and action (Wallace, i. p. 174). Macassar men is a

common name of the Bugi race. The Macassar people were taught Mahomedanism in the early part of the 16th century, but the Portuguese arrived A.D. 1525, and they embraced Christianity (Bikmore, p. 99). The Bugi are now the great navigators and traders and the most enterprising race of the Eastern Archipelago. In the beginning of the western monsoon they go in great numbers to the Aru islands, which is the principal rendezvous for the people of Ceram, Goram, the Ki islands, Tenimber, Baba, and the adjacent coast of New Guinea, a distance from Macassar of upwards of 1000 miles. They carry English calicoes, cotton goods of their own manufacture, Chinese gongs, and arrack; and the return cargoes are tortoiseshell, mother-of-pearl shell, pearls, birds of paradise, and trepang, the Malay term for all the kinds of holothuriz or sea-cucumbers. Of trepang alone about 14,000 pikuls are yearly shipped from Macassar, of the value of 600,000 dollars, or £150,000. It is estimated that the annual value of goods carried by the Bugi to the Aru islands from Macassar alone is 80,000 dollars, or 200,000 guilders; and of those taken to the Aru group from other places, 20,000 dollars, or 50,000 guilders.—*Bikmore*, 101.

The people of Minahassa differ much from all the other people in the Archipelago. They are of a light brown or yellow tint, often approaching the fairness of a European, of a rather short stature, stout, and well made, of an open and pleasing countenance, with the usual long, straight, jet black hair of the Malays, but disfigured, as age advances, with projecting cheek-bones. The coast people, where there has been intermixture, are coarse; but in inland villages, where the race is pure, both men and women are remarkably handsome. They are quiet and gentle, submissive to authority, and are easily induced to learn and adopt the habits of civilised life; they seem capable of acquiring a considerable amount of intellectual education, and they are clever mechanics. Since 1822, from the introduction of coffee planting and a settled government, the people, though still speaking different tongues, have become the best clothed, best housed, best fed, and best educated in the Archipelago. Much of this has been due to the tractable nature of this people, for near Menado is a race called Bantek, strong, but intractable, who have hitherto resisted all efforts to improve them. Some of the less civilised tribes have semi-Papuan features and hair, while in some villages the true Celebes or Bugi physiognomy prevails. The plateau of Tondano is chiefly inhabited by people nearly as white as the Chinese, and with very pleasing semi-European features. The people of Siau and Sangir much resemble these, and Mr. Wallace believes them probably to be immigrants from some of the islands of north Polynesia. The Papuan type will represent the remnant of the aborigines. The languages contain a Celebes-Malay element and a Papuan element, along with some radical peculiarities derived from the Siau and Sangir islands further north, and therefore probably derived from the Philippine Islands.

Celebes has iron, tin, and copper. It has about 16 species of land mammals, and about 191 species of birds, 94 of which are peculiar to it. Professor Bikmore says (p. 378) gold in great quantities occurs over all the northern peninsula.

from the Minahassa south to the isthmus of Palas. *Livistonia rotundifolia* is supposed by Mr. Wallace to be the fan-palm, and the people make water buckets and baskets of the leaf. Celebes has the *Carpophaga luctuosa*, a fine cream-coloured pigeon, also the *Coracias Temminckii*, and *Phœnicophaeus callirhynchus*, one of the finest known cuckoos. Its bill is of a brilliant yellow, red, and black. *Ornithoptera remus*, the largest and most beautiful of all the butterflies, is found in Celebes. *Accipiter trinitatus*, a beautiful hawk with elegant rows of large round white spots on the tail; *Strix Rosenbergii* and *S. Javanica*, the latter in all the islands up to Lombok. *Phleggenas tristigmatus* is the ground dove of Celebes. The Maleo, or *Megacephalon rubripes*, deposits its eggs in the loose sand of the sea-beach, in holes just above high-water mark; the female lays one large egg, which she covers over and returns to the forest; but many birds lay in the same hole. A dozen eggs are often found together. One egg fills an ordinary teacup, from 4 to 4½ inches long, and 2½ to 2¾ wide. They are very good to eat, and much sought after. The hen-bird takes no further care of the eggs, which the young bird breaks through about the 13th day, and runs at once to the forest. Each hen lays six or eight eggs in a season of two or three months. *Cittura cyanotes*, the forest kingfisher. *Meropogon Forsteni* (*Carpophaga Forsteni*) is a fruit pigeon of North Celebes. *Buceros cassidix*, the great horn-bill of Celebes. *Trichoglossus ornatus*, a beautiful brush-tongued parakeet. *Corvus advena*, a rare black and white crow. *Anoa depressicornis* (*Sapiutan*, MALAY) is the wild cow of Celebes; it is smaller than other wild cattle, and is found in the mountains. *Cynopithecus nigrescens*, the black baboon monkey. *Tachyris zarinda*, a rare butterfly, with cinnamon red wings. *Idea tondana*, a semi-transparent butterfly of Celebes. *Papilio androcles*, one of the largest and rarest of swallow-tailed butterflies. *Cicindela heros* and *C. gloriosa* also occur, the latter of a rich velvety green colour.—*Quarterly Review*, No. 222; *Bikmore's Travels*, pp. 101–378; *Crawford's Dictionary*, i. p. 243; *St. John's Indian Archipelago*, i. p. 351; *Wallace's Malay Archipelago*; *Horsburgh*; *Temminck*, *Coup d'Œil sur les Possessions Néerlandaises*, iii. p. 5; *Journ. Ind. Arch.* 1850, p. 764; *Jameson's Ed. Journ.* 1822, p. 402.

CELERY. *Apium graveolens*.

Kurufa, . . . ARAB. | Kin-tsai, . . . CHIN.
Ku'kin, . . . CHIN. | Ye-kin-tai, . . . "

Celery is a hardy biennial found wild in various parts of Europe, in the southern hemisphere, and in California, by the side of ditches near the sea, where the water is brackish. It is rank and coarse, but by cultivation it is transformed into a sweet and wholesome esculent. When the plants grow in moist ground they are poisonous. The cultivated plant grows best in a rich, well-drained soil. The process of excluding the light, by covering the stems with earth, also tends to render the poison, peculiar to the wild plant, inert. The seeds are sold in every Indian bazar, and used as stimulants by the native practitioners. The roots are also employed in medicine. The essential oil, dissolved in strong spirit, gives an essence a drop of which will communicate a strong and fine flavour of celery to a tureen of soup. *Celeriac* is a variety of celery, and managed similarly; root

used for stews.—*Riddell*; *Jaffrey*; *O'Shaughnessy*, p. 357.

CELIBACY is the rule with all the Buddhist priesthood, with the gurus of most sects of Hindus, also with the men and women of the Manbhaw sect; the Phoongyes, Talapoinas, Lamas, and nuns of the Buddhists; the Jain priesthood also are celibates, as also since the 11th century all the priesthood of the Romish Christians. The Sherif families of Mecca affect marrying female slaves, thereby showing the intense pride which finds no Arab noble enough for them. Others take to wife Bedouin girls; their blood, therefore, is by no means pure. The worst feature of their system is the forced celibacy of their daughters: they are never married into any but Sherif families; consequently they often die in spinsterhood. The effects of this custom are most pernicious, for though celibacy exists in the East, it is by no means synonymous with chastity. Here it springs from a morbid sense of honour, and arose, it is popularly said, from an affront taken by a Sherif against his daughter's husband. But all Arabs condemn the practice.—*Burton's Mecca*, iii. p. 33.

CELOSIA ALBIDA. Linn.

Booroondie, . . . SANSK. | Gurugu kura, . . . TEL.
Pannay keeray, . . . TAM.

This genus of plants is of the order *Amarantaceæ*. Roxburgh (i. pp. 678–9) mentions *C. argentea*, *C. cernua*, *C. comosa*, and *C. cristata*. *C. cernua*, drooping cockscomb, is cultivated as a flower.—*Irr.*

CELOSIA ARGENTEA. Linn.

Teing-siang, . . . CHIN.	Chil-chil, Sil, . . . HIND.
Ts'au Kiueh-ming, . . . "	Salyara, . . . "
White cockscomb, . . . ENG.	Deo-koti, . . . "
Safed murghkes, . . . HIND.	Gurugu, . . . TEL.
Sarwari, Sar-pankha, . . . "	Panche chettu, . . . "

It grows all over China. It is a troublesome weed amongst flax, but the Chinese gather and eat it as a vegetable. Its black seeds are used internally as a medicine. A double variety is cultivated. The single variety, both white and pink, is very common in the ruins in the cultivated fields of India, and cattle eat the plants, especially buffaloes.—*Genl. Med. Top.* p. 185; *Smith*.

CELOSIA CRISTATA. Linn.

Kyet mouk, . . . BURM.	Taj i Khurus, . . . HIND.
Ki-kwan, . . . CHIN.	Kanju, . . . "
Crested cockscomb, . . . ENG.	Erra-kodi juttu tota, . . . "
Pila Murghkes, . . . HIND.	kura, . . . TEL.
Lal Murghkes, . . . "	Kodi juttu tota kura, . . . "

Both white and yellow varieties are cultivated in gardens. The Hindi, Telugu, and Burman names signify cockscomb, like the English.—*Mason*.

CELSIA COROMANDELIANA. Vahl.

Kushima. A garden weed in India, growing in waste places in the Dekhan, on the banks of rivers, and near still waters. The inspissated juice of the leaves is given in dysentery, acting as a sedative and astringent.—*Drury*.

CELT implements of manufacture, agriculture, and for domestic purposes, used by ancient prehistoric races of the world. They have been discovered in Europe and India. Mr. Allan Hume, C.B., discovered many in Hindustan, and Colonel Meadows Taylor others at Lingasagar in the Raichore Doab. They are of flint or chalcedony. Mr. W. Theobald and Captain Fryer found celts or stone weapons in the country extending upwards of 200 miles east of the Toris river, and

accumulated at Karo in Kirwee. Dr. Mason found them in Burma almost identical with those found in Europe. The celt chipping or hewing stone, the thunderbolt, the coin de foudre, laierre de tonnerre, the Til hugger steen of the Germans, may have been the moen sourons of Brittany, a hatchet, axe, chisel, adze, or wedge. They are numerous in the Channel Islands. Those found in the Karnatic are of fibrolite, those of the Swiss lakes are of jade. The natives of Kirwee have adorned some of the celts with a daub of red paint as Siva. Most of the Andamanese stone chips seem to be arrow-heads for shooting fish, or intended to be used with the fingers in dividing fish and flesh. Flint and chert chippings have been discovered at Kalezur, Jubbulpur, and Kuttura. Polished celts occur in Central India. Cores have been found near the Indus, and flakes and cores near Jubbulpur.

CELTIS, a genus of plants belonging to the Ulmaceae. *C. australis* and *C. caucasica* are the Batkar, HIND., of Kaghan. *C. dysodoxylon*, *Thw.*, the Guranda gass of the Singhalese, is a small tree which grows up to 5000 feet in the Central Provinces.—*Cleghorn's Report*; *Thw. Zeyl.* p. 267.

CELTIS AUSTRALIS, the lotus tree of N. Africa, S. Europe, and S. Asia, ascends the Himalaya to 9000 feet. It attains a height of 50 feet, and lives to a thousand years. Berries edible, wood hard and dense, suited for turnery and carving. The stem-wood is fine-grained, easily cleft, and of a splendid yellow tinge. The branch-wood is excellent for whip-sticks.—*Von Mueller*.

CELTIS CAUCASICA. *Willde.* Nettle tree.

Bigni, Bigni, .	CHENAB.	Brimdu, Brumij, .	KASH.
Kharg, Wattaman, .	„	Irimla, .	„
Batkarar, .	JHEUM.	Takhum, Tago, .	TR.-IND.

Fruit—Kangal mirch, Indarba, HIND.

This fine tree is common, wild, from 2500 to 8500 feet in the Panjab Himalaya, and occurs in Trans-Indus down to 1500 feet; and Dr. Griffith says it is cultivated in Afghanistan. It attains 16½ feet in girth; and trees of seven or eight feet are not uncommon. Its timber is white, light, soft, weak, and subject to the attacks of insects. It is chiefly used for farmer's work, charcoal and fuel. Dr. Bellow mentions that in the Peshawur valley it is often made into charms to keep off the evil eye from man and beast, and Dr. Cleghorn states that its bark is used for sandals.—*Dr. Bellow*; *J. L. Stewart, M.D.*, p. 209; *Cleghorn*.

CELTIS ERIOCARPA, nettle tree, koo of the Panjab, is found in the Sutlej valley between Rampur and Sangnam, at an elevation of 6000 feet. Bark used for making shoes.—*Cleghorn*.

CELTIS NEPALENSIS. *Planch.* Batkar, Tago, of the Trans-Indus and Panjab. Dr. Stewart found it in parts of the Jhelum basin and Trans-Indus at about 2500 to 3500 feet. The Pathans are said to use its tough wood for churn-sticks.—*Dr. J. L. Stewart*.

CELTIS ORIENTALIS. *L.* Indian nettle tree.
Sponia orientalis, Commers.

Tubunna, Chakan, BENG.	Gadda nelli, .	TEL.
Mallam toddali, MALEAL.	Urn kanija nalika, .	„
Karak, .	PANJ.	„

A tree which is pretty common all over India, and in Kullu is planted in avenues. Dr. Buchanan Hamilton says the under bark of this tree, like that of the West India kind, consisting of numerous reticulated fibres, forms a kind of natural cloth,

used by the Garo (*Lin. Trans.* xvii. p. 209) as a kind of rug. The Garo make several such cloths of different colours from various barks. The Garo who come to the plains, generally buy some small ends of cloths from the Bengalis, to attend the hauts (fairs) in, not as clothing to protect them from wind and weather.—*Rorb.* ii. 65; *Royle, Fib. Pl.* 317; *Cleghorn*; *Kullu*, 80.

CELTIS TRINERVIA. *Rozb.* iii. 65. *C. Roxburghii, Planchon.* This good-sized tree grows in Eastern Bengal, is met with on the Eastern Ghats of the Madras Presidency, Golconda hills near Vizagapatam, at 3000 feet elevation; also on the Bombay Ghats.

CELTIS WIGHTII. *Wight, Ic.* Not uncommon in the hot, drier parts of Ceylon.—*Th. Zeyl.*

CEMENT.

Chuna, .	HIND.	Smalto, .	IT.
Mortel, Kitt, Band, GER.	Chunambu, .	TAM.	

Lime, septariae, dolomite, magnesite, gypsum, and other substances are used in manufacturing cements. The shell lime of Sooloorpett is a pure carbonate of lime. The kankar or nodular lime-stones of India are more durable, though not so white. Septariae, or Parker's cement stones, accompany the strata of blue and white potter's clay and kaolin that are so common in the Madras Presidency. The best hydraulic septariae occur at Awady near Madras, at Bangalore and Chingleput. A very fine hydraulic cement on the banks of the Godavery was extensively used in the construction of the Godavery and Kistna anicuts. A very good hydraulic limestone occurs along with the blue slate of Cuddapah, and the dolomites of the Ceded Districts and the Northern Circars make good cements. The magnesite of Salem, Bangalore, and Vizianagram acquires great hardness of surface, but is deficient in adhesiveness. It possesses some good hydraulic properties, but has disappointed the expectations at first formed of its usefulness.

The ordinary Indian cement is lime in its various forms; a cement capable of bearing a pressure of 650 to 1000 pounds and upwards is produced from ordinary kankar, combined with a certain proportion of pure limestone. Kankar is a limestone mostly nodular, always freshwater and recent,—in most cases in the act of being formed under our eyes. It is sometimes found in thick stratified beds like the travertine near Rome, and seems in this case to have been formed by calcareous springs; more generally it is met with in clay or alluvial soil, in the shape of small pieces from the size of peas or filberts to that of the hand. In the blue clay which stretches along the Indian shores it is found in vast abundance, generally assuming the most fantastic forms; indeed, it abounds in every rice field and open soil all over the country. The more recent varieties seem to be formed by the agency of the rains; when the earth abounds with vegetation, the tepid waters are charged with fixed air, and dissolve the lime prevailing in the soil everywhere around, the mineral being again thrown down as the advancing season dispels the excess of gas. In this state absorbs the clayey matter around, and cements it into kankar. This is collected by the lime-burner, placed with fire-wood in small-sized conical kilns, and burnt in the usual way. It contains 72 of carbonate of lime, 15 of sand, and 11 of clay and oxide of iron. Mixed with half its weight of river sand, it makes an excellent mortar; burnt in pieces of a cubic

inch or so in size, and then powdered without slaking, it forms a first-rate water cement, setting in a few minutes, and becoming as hard as stone. At Poona the finer varieties of kankar are burnt with charcoal, in neat kilns 2½ feet high and in diameter at the base. These hold about a cubic foot of material, or about 36 lbs. of charcoal and kankar in equal parts. When burnt, it is slaked and then made up into bricks, which are sold in the bazar for the purpose of whitewashing. The finer kinds of lime and cement on the Coromandel coast are made from shells. A piece of ground about ten feet square is laid down even, and floored over with clay; an upright pole is placed at each end of this, and a sheet stretched out with lark-stays spread between the poles, which are steadied with strings. On the floor a bed of shells and rice-chaff alternately, about ten inches thick and eight feet by six, is spread neatly out. Some firewood is placed along the windward side of this, and when the sea breeze sets in the wood is kindled. As the heat extends to leeward, and the shells become calcined, the lime-burners draw off the fore-parts of them with a stick, and so soon as they have cooled on the floor sufficiently to allow them to be handled, they are placed in a scoop basket, and the dirt and epidermis winnowed from them. The shells, now white and pearly, are next thrown into a small-sized vat partially filled with water; here they for some time boil from the effects of the heat and slaking. The whole in a short time settles down into a fine semi-fluid mass, which is taken out and slightly dried, and is now ready for use. A good hydraulic cement is formed of the blue clay of Madras and shell lime.

Bitumen or asphalt seems to have been employed as cement in Babylon. The works of salt and bitumen even yet around Hit, give a most singular appearance to the country; and the most learned geographers are of opinion that the town of Hit is the Is of Herodotus, whence the Babylonians drew the bitumen in which they set their bricks.

All over the East an exceedingly hard cement, which they use as mortar and to form the lining of baths and reservoirs, is made with equal parts of wood ashes, thoroughly sifted, and powdered lime, and by others with two parts of lime to one of ashes, but in either case these materials are well mixed. Water is then poured upon them, and they are well kneaded, after which the mass is beaten for six days by two men with large sticks, uninterruptedly, except at night; when it becomes a little solid on one side, it is turned over and beaten on the other, care being taken to moisten it occasionally, lest it should become too dry. When thus well mixed, it is folded and turned, and beaten again and again till the sixth day, when it is ready for use. In building, this cement is laid between the bricks, which are tightly pressed upon each other; for lining it is laid upon the surface that is to be covered, and spread with a flat and polished flint, for it must not be touched with the hand, as it would burn. Three layers are put on successively, and the third is washed over with oil, but of what kind is immaterial; when it is dry, nothing can equal the beauty and solidity of this cement, which is called 'sarooj.' There is another description, called 'sarooj maghrebi,' but it is not so much used; this is composed of one-third of hot lime, one of

sifted sand, and one of pounded brick.—*Ferrier, Hist. of Afghan.* pp. 296-9; *Skinner's Overland Journey*, ii. p. 113; *Dr. Buist in Bombay Times*.

CENOBITA, a genus of hermit crabs in mollusca. *C. clypeata*, *Edw.*, Asiatic seas; *C. rugosa*, Indian Ocean; *C. spinosa*, Asiatic seas; *C. perlata*, South Seas.

CENSUS. A rough census of the population, called 'Khana-shumari,' was always made under the Indian princes. The dislike to a census in the East appears to arise from the necessity of mentioning their women, also a vague fear that Government is plotting some mischief against them, and a superstitious aversion to assist in rousing divine wrath by what they consider such a display of pride as that of numbering the people. Since the year 1867, the British Indian Government has had a census of several provinces, followed in 1871-72 and 1881 by a general census of all India. That of 1881 was estimated to cost twenty lakhs = £200,000.

CENTAUREA BEHMEN. *Linn.*
Behmen-abiad, . ARAB. | Suffaid behmen, . . BR.

Centaurea is a genus of ornamental flowering plants common in India. The flowers are fragrant, and of different shades of colour—purple, blue, yellow, white, red, brown, etc. *C. atropurpurea* is the sweet sultan. *C. Behmen* root is brought from Kabul, and is used in special diseases as a bitter tonic and purgative. The red kind, Behmen-lal or Behmen-surkh, is said by some to be the root of the *Salvia hamatoidea*.—*Poorel*, i. 355.

CENTETES ILLIGER. *Smith.*
Wei; Wei-shu, . CHIN. | Ten-rec or Tond-rec, ENG.

Several species of this genus of mammals are said to occur in China. The bristles are made into brushes.—*Smith.*

CENTIPEDES are very common in the East Indies two to six inches long. They are generally supposed to be poisonous, but such is not the case.

CENTRAL ASIA is a term used differently by geographers, ethnologists, and politicians; by the last of these it is usually applied to the region intervening between Russia in Asia on the north, and Persia and Afghanistan on the south, and lying to the west of Chinese Tartary, its chief western boundary being the Caspian Sea. The Russians often restrict the term Central Asia to the second great division of the Central Asiatic highlands of their Asiatic possessions, which is mainly comprised within the Aralo-Caspian depression. The vast plateau of Central Asia proper has on its east the lofty table-land of the Bolor mountains, which form the western boundary of Chinese Turkestan and Dzungaria, and the river Irtysh; the northern boundary is Western Siberia, and Afghanistan lies south-east. The northern half of Central Asia consists of the Kirghiz desert, which is mountainous and rugged on the east, and full of saline steppes on the west. In the midst of the southern half lies the Sea of Aral, on the western side of which, up to the Caspian Sea on the west, there stretches a broad tract of desert. But on its eastern side is a fertile tract, watered by the Syr Darya and Amu Darya, the Jaxartes and the Oxus, and it is in this fertile tract that the conquests of Russia were made between 1864 and 1868. After long years spent in fortifying posts, in 1864 Russia made a sudden irruption into the upper valley of the Jaxartes, and took three forts of Khokand, viz. Aouliotta, Turkestan,

and Chemkend. In the spring of 1865 the chief of Khokand fell in battle; and in June 1865 the city of Tashkend was stormed. On the 20th May 1866 they fought and won the battle of Irdjar against the Bokhariotes, and later in the year captured the forts of Oratepe and Juzak, within 40 miles of Samarcand. On the 13th May 1868 a great battle was fought under the walls of Samarcand, and the city surrendered; and later in the year Bokhara yielded (Fortnightly Review, July 1868). In these operations the Russians used only 2000 and 3000 men, and never had more than 15,000 in all Turkestan. Russian Turkestan has a population of two millions, viz. Bokhara, 1,000,000; Khokand, 900,000; Khiva (less the independent Turkoman tribes), 300,000. During the fifteen years, 1867 to 1882, that General Kaufman was governor-general of Turkestan, Russia became paramount in Khiva (1873), took Kuldja from the Chinese, and again restored it, and subdued the Tekke Turkoman. Kuldja was important to Russia so long as the advance upon India lay through Turkestan; but directly the line of aggression was shifted to the Trans-Caspian region, it was seen at once how relatively inferior any annexations in the direction of Kashgar were to those by way of Akhal and Merv. Russian rule in Turkestan is harsh, but it is far ahead of Chinese administration in Kashgar, particularly in the extreme respect and tolerance accorded to the Mahomedans in the exercise of their religion.

The south-eastern boundary line, along the Afghan frontier, was accurately laid down by agreement with the British Government in 1873. The south-western boundary line, along the Persian frontier, under agreement with the Persian Government in 1882, now runs from the south-east corner of the Caspian up the Atrek valley to Chat, at the junction of the Sumbar, thence eastwards along the water-parting to a point south-east of Askabad.

The Caspian Sea is the lowest part of the Aralo-Caspian depression, and all the streams of Central Asia ought to disengage into the Caspian; but the river Emba alone reaches that outlet. All the rest run dry, like the Tajand, Murghab, Zar-afshan, Chui, Talas, and Sari, or else, like the Oxus and Jaxartes, become absorbed in the Aral.

The mountain ranges in this region comprise the Karakorum, Kouen Lun, Pamir, and Tian Shan. The Pamir forms the nucleus of the whole Central Asiatic highland system. Here converge the Hindu Kush and Himalaya from the south-west and south-east, the Kouen Lun from the east, the Tian Shan from the north-east; while the plateau itself merges westwards in the snowy highlands and ice-fields about the sources of the Zar-afshan, between the valleys of the Amu Darya (Oxus) and Syr Darya (Jaxartes). It consists of a vast plateau formation, some 30,000 square miles in extent, with a mean elevation of at least 15,000 feet, culminating in the east with the Tagharma, 25,500 feet. Northwards its limits are the Alai and Trans-Alai ranges, skirting the south side of Farghana (Khokand), and forming the water-parting between the valleys of the Syr Darya and Zar-afshan rivers. Its southern limits seem to be marked by the ridge connecting the Karakorum with the Hindu Kush, and forming

the water-parting between the Upper Amu Darya and Indus basins.

The range seems to run north-west and south-east, between the Kashgartagh and the Karakorum, at a mean elevation of 20,000 feet, culminating in Mount Tagharma (Taghalma), 25,500 feet.

The Trans-Alai, seen by Kostenko in 1876, he describes as an alpine chain 10,000 to 12,000 feet high, forming the northern boundary of the Pamir, which stretches thence southwards, and which is crossed in every direction by ridges, all rising above the snow-line, and dividing it into a number of upland plains. The whole region is destitute of trees and shrubs, and even the grass grows only in isolated patches along the banks of the streams.

The great *Central Asiatic plateau* consists of several distinct sections, grouped round the central basin of the Tarim, which is little over 1600 feet above sea-level. South of it the land rises in successive stages from 3000 to 6000, 10,000, and 15,000 feet, the probable mean altitude of the Tibetan plateau. Above this vast table-land the intersecting ranges attain altitudes of from 20,000 to 25,000 feet, culminating in the southern scarp of the Himalaya, with peaks ranging from 26,000 to 29,000 feet. North of the Tarim basin, also, the land rises in terraces of 3000, 6000, and 15,000 feet, here culminating with the Tengri-Khan (25,000), central and highest point of the Tian Shan. Beyond the Tian Shan the ground again falls gradually to about 1500 feet in the Zangarian depression (Tian Shan Pe-lu), north of which it attains a height of 7000 or 8000 feet in the Kobdo plateau. This elevation is maintained in North Mongolia eastwards to the head waters of the Amur, but in the central parts of the Gobi desert stretches from Lob Nor at a mean height of about 3000 feet to the Khinggan range. Lastly, the closed basin of the Koko Nor, between the Nan Shan and Burkhan Buddha ranges, stands at an altitude of not less than 10,500 feet above sea-level.

Central Asia has a hardy peasantry dwelling in the mountain region, with its vast upland downs well suited for summer pasture, partly descendants of the original inhabitants, and in part composed of the many races who have swept through the country. At the foot of the mountains, in tracts of surpassing fertility, Uzbek, Turk, Bokhariot, Kalmuk, Kirghiz, Karakalpak, Tajak, Sart, Russians, Uigur, Manchu, Chinese, Armenian, and Indians dwell in the well-watered plains. Beyond these, in every direction, are the pathless lands, which have been tenanted by pastoral nomads ever since the earth was peopled. They have dark complexions, and dark colour of hair. The Mongol race is represented by the Kalmuk, who have dark hair, olive complexions, oblique eyes, flat faces, high cheek-bones, thin lips, and flat noses. The remaining races, such as the Mongolo-Turk and those of Turko-Finnish extraction, present a strange admixture of types and shades of complexion. One remarks among them fair men, with a regular Roman nose. Generally speaking, however, in the physical appearance of these tribes, there is observable a mixture of the Caucasian race with the Mongolian.

Its people are from two distinct sources, viz. the

settled races, descendants of Semitic and Iranian conquerors from the south; and the races who have been occupying the country from prehistoric times, and are in their habits the same as they were 2000 years ago.

I. TURKI STOCK.

<i>Uzbaks</i> , viz. Kungrad, Naiman, Kipchak, Jalair, Andijani, in Bokhara, Farghana, and Khiva,	2,000,000
<i>Kara Kalpak</i> , viz. Baymakli, Khandelki, Achamayli, Ingakli, Shaku, and Ontoturuk, mainly on the south and south-east shores of the Aral,	50,000
<i>Kirghiz-Kazak</i> , viz. Great Horde (Ulu-Yuz), Middle Horde (Urta-Yuz), Little Horde (Kachi-Yuz), Inner Horde (Bukeyeokskaya), in the steppes between Lake Balkash and Lower Volga,	2,750,000
<i>Kara Kirghiz</i> (Buruts), of Tian Shan and Pamir,	400,000
<i>Turkomans</i> , viz. Tekke, Goklan, Yomud; Sarik; Salor, Kara-Ali, Eli; Ersari, Chaudor of Ust-Urt, Khwarezm, Daman-i-Koh and left bank of Oxus,	600,000

II. IRANIC STOCK.

<i>Tojak</i> , Sart, Persians, in Khiva, Bokhara, and Farghana,	1,000,000
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III. GALCHA STOCK.

Maghian, Kashtut, Falgar, Macha, Fang; Yaghaub and Karateghin in Farghana, Zar-afshan, Kurateghim highlands and Upper Oxus valleys,	250,000
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The Turko-Tartaric race stretches from the Polar Sea to the Hindu Kush, and from the interior of China to the shores of the Danube. Vambery divides the Turks who from east to west occupy this extent, into Burut, Kara-Kirghiz black, or pure Kirghiz, properly Kazak, Kara Kalpak, Turkoman, Uzbek. The name by which Vambery designates these people is Turko-Tartars, from amongst whom came the warrior peoples known in the west as the Hun, the Avar, the Utigur, the Kutrigur, and Khazar. But the manner of living, the customs and physical conditions as then described, of the Tartar tribes whose arms reached from the Jaxartes to the heart of Rome and Gaul, have much resemblance to those of the present inhabitants of Turkestan, and the people of Central Asia, particularly the nomade tribes, are in their social habits the same as they were two thousand years ago. In the tent of many a nomade chief a similar life is observable as that described by Priscus as prevailing at the court of the king of the Huns. Attila, Chengiz Khan, and Timur in historical characters resemble each other; and Vambery is of opinion that energy and good fortune could now almost produce on the banks of the Oxus and Jaxartes one of those warriors whose soldiers, like an avalanche carrying everything before it, would increase to hundreds of thousands, and would appear as a new example of God's scourge, if the powerful barriers of our civilisation, which has a great influence in the East, did not stop the way.

The *Turk*, wherever met with, is ever heavy and lethargic in his mind and body, but in his resolves firm and steadfast, not from principle, but from apathy and aversion to change. And it is from these characteristics that his appearance is earnest and solemn,—a profound seriousness, a marble, cold expression of countenance, with a great inclination to pomp and magnificence. An *Uzbek* or Turkoman has a proud bearing, as if possessed

with a self-consciousness of greatness and power. The *Osmanli Turk's* love of independence is boundless. He considers himself born to rule, and that hunting and war alone are worthy of him, and husbandry is considered ignominious. In Central Asia, agriculture is exclusively in the hands of the Persian slaves, commerce and business with the Tajak, Hindu, and Jew. The Turk is intellectually the inferior of the Iranian and Semitic nations. This defect is noticed by other nations, who apply the terms *Turkluk* (Turkdom), *Kabalik* (coarseness), and *Yogunluk* (thickness), *Sadeluk* (simpleness); and with these qualities, as the *Osmanli* is easily taken in by the Armenian, Greek, and Arab, the Turk is as easily so by the Tajak and Hindu. In transactions the Turk are regarded as possessing more honesty, frankness, and confidence, plainness, simplicity, and uprightness. Compared with the Persians, the Turk is a faithful servant, attached soldier, and upright man. They are more brave, persevering, and love more to rule than any other Asiatic people. They are unpolished, wild, and uncultivated, but seldom cruel out of malice. They crave riches, but only to expend them. They exact much labour from their subordinates, but protect and deal liberally with them. The Turk is innately a nomade, and, like others, is distinguished for hospitality. The Burut is the wildest and most savage and most superstitious of them, but less malicious than the Kirghiz and Turkoman. The Burut has not wholly abandoned shamanism, and knows little of Islam.

The *Kazak Kirghiz* are less brave and warlike, though readily engaging in a pillaging expedition. They form the bulk of the Turkish nomades, and are for the most part devoted to a wandering life. In very few instances have they settled.

The *Kara Kalpak* are considered dull and foolish. They are even less warlike than the Kirghiz. They have seldom appeared as conquerors, and are even less employed as mercenaries. They are largely occupied as cattle-breeders, and they are active, benevolent, and faithful.

Many of the *Turkoman* dwell in a half-settled state along the left bank of the Oxus as far as Char Jui, and in Khiva. They are notorious amongst all the races of Central Asia as the most restless adventurers. Throughout the whole globe it would be difficult to find a second nation with such a restless spirit and untameable licentiousness as these children of the desert. To rob, to plunder, to make slaves, is to the Turkoman honourable. They are always poor, and are dirty and avaricious. Their country is the wildest and most savage, where even keeping a few cattle gives only a scanty income.

The *Uzbek* are honest, upright, with much Turkish open-heartedness, and are proud of their education, and represent all the best side of the natural character of the Turks.

The nomadic races of High Asia are so essentially predatory, that, according to Abul Ghazi (p. 106), they have a proverb, 'Atang yortin jan Chapsa'—If the enemy attack thy father's tent, join him and share the plunder. The people are chiefly gathered about the fertile tracts. Merv, destroyed in 1784 by the Amir of Bokhara, is now a mere collection of mud huts. Khiva, in 1874, had only 5000 inhabitants. Urganji is near it. Bokhara, in 1830, had 140,000 inhabitants, but in 1880 only 7000, of

whom two-thirds are Tajak; the loss of water from the Zar-afshan is the cause of its decay. Samarcand, on the other hand, has risen from 8000 in 1834 to 30,000 in 1880.

The double-humped camel belongs properly to high Central Asia south of the Gobi desert, and would even appear still to exist there in a state of nature. Its western boundary, where bred, seems to be among the Kazak (or Cossacks), north of Bokhara. Lieutenant Wood, of Sir A. Burnes' party, who explored the Oxus to its source in the Sir-i-Kol lake in Pamir, in Wakhan learned that it is bred only among the Kirghiz of Pamir and Khokand. Burnes remarks that the Bactrian camel, which has two humps, abounds in Turkestan; they are bred by the Kazak of the desert north of Bokhara. In its proper and more elevated habitat, this animal is employed together with the yak, as observed in an easterly direction by MM. Iluc and Gabek.—*Porter's Travels*, i. p. 112; *Fortnightly Review*, 1868; *Dr. Jackson in Transactions of the Beng. As. Soc.* iii.; *Russians in Central Asia*, Captain Valikhanof and M. Venukof; *Malcolm's Persia*, i. p. 20; *Stanton's Narrative*; *Vambery, Sketches in Central Asia*, pp. 283-312; *Vambery, Bokhara*, p. 247; *Asia*, by Mr. Keane and Sir Richard Temple.

CENTRAL INDIA is the designation for a geographical and political division of British India. It is a table-land of uneven surface, from 1500 to 2500 feet above the sea, bounded by the Aravalli mountains on the west, by those of the Vindhya on the south, supported on the east by a lower range in Bundelkhand, and sloping gradually on the north-east into the basin of the Ganges. It is a diversified but fertile tract. The Patar or plateau is about 700 miles long. Its breadth very various, greatest from Amjherra to Ajmir, 250 miles; from Mhow to Mokundurra, 150 miles; at Saugor and Dumoh, 75 miles; afterwards very narrow. It is highest towards S. and W.; average of Udaipur, 2000 feet; Malwa, 1500 to 2000; Bhopal, 2000; Bundelkhand, about 1000; Shahabad, 700; plain of Ajmir, 2000; Udaipur town, 21° 37', 73° 49', 2064. It slopes to N.E., the Banas river flowing in that direction; gradual fall also to the valley of the Chambal river, where it rises to Malwa; Mhow, 2019 feet; Dhar, 1908; Indore, 1998; crest of Jaun ghat, 2328; Ujjain, 1698; Adjygarh, 1340; Amjherra, 1890; Saugor, 1940; Rhotasgarh, 700; Sonar river, at source, 1900. From the Vindhya range the surface has a generally gradual but in some places abrupt descent, as at Mokundurra and the Bindyachal hills, where the rivers occasionally fall over the brow in cascades. Shahabad district is very rocky and uneven.

This region is ruled by about 131 princes and chiefs,—Rajput, Bhil, Mahomedan, Mahratta, and Brahman,—over subject races of non-Aryan, Seythic, Aryan, Arab, Afghan, and Persian and Moghul descent, over Hindus, Baghel, Bhil, Gond, Jat, Koli, Mair, Mena, Rajput, and cultivating tribes of Kunbi, Kurmi, and Mali. Their political relations with British India are superintended by the Central Indian Agency stationed at Indore, with subordinate agencies for Baghelkhand, the Bhil, Bhopal, Guna, Gwalior, Indore, and Western Malwa. The states and chiefships in Central India form a political, and are in a natural, division of British India, and include an area of 83,600

square miles, and a population of about eight millions.

The people of Rewa are indolent and untrustworthy, and they and the country generally are certainly far less civilised than the neighbouring state and people of Bundelkhand. The country and people vary greatly in their character. Nothing can be a greater contrast than the desolate wilds and jungles of the Western Satpura hills and parts of the country extending from them to the Vindhya, with their savage inhabitants, the Bhil tribes, who abhor field, or indeed any other manual labour, and the adjoining richly-cultivated plains of Malwa, extending, with occasional intervening tracts of hill and jungle, from the Mhye on the west to Bhilsa on the east, a stretch of close on 200 miles, and from the crest of the line of the Vindhya to Mundissore and Oomutwarra, a distance of from 100 to 120 miles, and populated by a thrifty agricultural people. This is succeeded by the more hilly and jungly land of Oomutwarra, Seronje, and Keechiwarra, with their scanty population. Northwards towards Gwalior, the country becomes more open, except on the wild border tracts of Kotah of Bundelkhand, till we come to the carefully cultivated plain of Gwalior, stretching for a distance of 140 miles between the Chambal, Pahooj, and Sind rivers. A vast portion of Bundelkhand is hilly and unproductive, forming the northern slope of the table-land of the Vindhya, but the scenery is strikingly grand (*Ann. Ind. Adm.* xi. p. 341). Raja Rama, Baghel, protected Humayun's wife, mother of the emperor Akbar. The Baghel are of the Solunki rajput race. The four Agnikula, or fire-born Rajput tribes, the Chauhan, Solunki, Powar or Pramur, and the Purihar, are now mainly found in the tract from Ujjain to Rewa, near Benares. And Mount Abu is asserted to have been the place of their miraculous birth or appearance.

Though widely different in other respects, there is one characteristic common to the Baghel of Rewa, the Bundela of Bundelkhand, and the Rajput of Gwalior and Malwa,—a dislike to labour or service away from their homes, so that they do not generally take an active part in the business of tilling the soil, such being, as a rule, left to servile classes. They are throughout the territory generally regarded as the local heads of society or of the village communities to which they belong, and many of them possess much influence amongst those around them as the representatives of the ancient families of the respective clans. In Malwa the principal trade marts are Indore, Bhopal, Ujjain, Mundissore, Rutham, Dhar, Jowra, Augur, Nemuch, Shoojawulpur, and Bhilsa. Opium chiefly is sold in Rewa; its chief is of the Baghel race. Tin and copper are found in Udaipur.—*Treaties, Engagements, and Summols*; *Tod's Rajasthan*; *Pioneer*; *Ann. Ind. Adm.* xi. pp. 312, 353.

CENTRAL PROVINCES form an administrative portion of British India, lying between lat. 17° 15' and 24° 27' N., and long. 76° and 85° 15' E. During Lord Canning's rule, the provinces of Nagpur and of Saugor and Nerbadda were united under a Commissioner. They consist of perhaps the grandest plateau on the face of the globe, more than half of it covered by the densest jungle, where the wild beast finds its lair and the Gond savage a precarious subsistence. For revenue purposes it has been arranged into the four dis-

tricts of Nagpur, Jubbulpur, Nerbadda, and Ch'hattisgarh.

The Nagpur province and the Saugor and Nerbadda territories occupy almost all the old territorial division of Gondwana.

Saugor and Dumoh districts are on the Vindhyan table-land.

Mandla, Jubbulpur, Narsinghpur, Hoshungabad and part of Newar are in the Nerbadda valley.

Baitool, Chindwara, Seoni, and Balagahat are on the Satpura table-land.

Nagpur, Warda, Bhandara, and Chanda are on the Nagpur plain, in the valleys of the Warda and Wainganga.

Raipur and Bilaspur are on the Ch'hattisgarh plain, and Sumbulpore is in the valley of the Mahanadi.

Upper Godavery is on the left bank of that river.

The plateau is in the very centre of the Peninsula. From it, as from a focus, radiate great rivers. To the north flow the Son into the Ganges, the Cana, the Betwa, the Sind, and the Chambal into the Jumna. To the west are the Tapi and Nerbadda, and to the east the Wainganga, Warda, and Peinganga, which join the Godavery. What the Kuen Lun mountains are to the river system of Central Asia, and the Himalaya to Northern India, that is the Mahadeo range to the Dekhan. To the east of Bhandara and parts of the Chanda districts is an irregular expanse of water, the largest portion at Nawagan being 17 miles in circumference, with a depth in places of 90 feet, and many Hindu temples have been erected at the scenic spots. On this wide table-land there is soil of surpassing fertility; its woods are inexhaustible; and it has coal, iron, precious stones, and gold. Here all the emigrants of Great Britain for the next decade might settle and grow rich. The area is 112,912 square miles, of which 47,299 are unculturable, and in 1868 about half of the remainder was under cultivation. Between the Census of 1872 and 1881, the population increased in the districts from 8,173,824 to 9,838,791, an increase of 1,664,967; and in the Feudatory States from 1,049,710 to 1,709,720, an increase of 660,010; or a total increase of just twenty-five per cent.

The Native States are—

	Area. Sq. miles.	Pop. In 1872.		Area. Sq. miles.	Pop. In 1872.
Bamra, . . .	1,988	53,613	Nandgaon, . . .	2,399	98,636
Bastar, . . .	13,092	78,856	Patna, . . .		
Chutia Nagpur, . .			Raigarh Bar-		
16 mahals, . . .			garh, . . .	1,486	63,304
Kanker, . . .	639	41,542	Baira Khod, . .	832	12,660
Karond, . . .	3,745	133,483	Sarangarh, . . .	540	57,091
Kawarda, . . .	887	75,462	Sonpur, . . .	906	130,713
Khairagarh, . . .	910	122,261	Sakti, . . .	115	8,394
Khondka, . . .	174	20,500			
Makral, . . .	215	13,648	Total, . . .	28,834	1,049,710

In 1872 the non-Aryan tribes numbered 2,014,731, of whom 1,669,835 inhabited British territory. Most of the Gond chiefs have a Rajput ancestry mixed with aboriginal blood.

The Satpura plateau runs nearly east and west for 600 miles. It is the true barrier between Northern and Southern India, and is the line on which the settlers from Hindustan met the emigrants from the Dekhan and Maharashtra, each of them pressing the prior races into the great natural fastnesses of the mountain range. The Satpura mountain range, extending from Rajpiplah to Asirgarh, is a belt of mountainous country 40 or 50

miles in breadth, with an average height of 2000 feet.

In Gondwana there are now only two millions of aborigines, out of a total population of nine millions. The remaining seven millions almost amount to a microcosm of the people in India, and justice is administered in the Central Provinces in five different languages, viz. Urdu, Hindi, Mahratti, Uriya, and Telugu. In round numbers, the seven millions may be thus classified:—1½ millions speak Mahratti; 1½ do. speak Uriya; 1 do. speak Hindi.

Dr. W. W. Hunter gives the following as the languages peculiar to Central India:—

Ho (Kol).	Mundala.	Kolami.	Khond.
Kol (Sing-bhum).	Rajmahali.	Madi.	Savara.
Santali.	Gondi.	Madia.	Gadaba.
Bhumij.	Gayeti.	Kuri.	Yerukala.
Uraon.	Rutluk.	Keikadi.	Chentsu.
	Naikude.		

Kolarian tribes occupy the broad belt of hilly country that runs almost continuously across India from the Santal tracts to the Kurku settlements. The Santal in the east, and the Kurku in the west, speak a language substantially the same.

The Central Provinces Kolarian tribes are:

Bhil.	Byga.	Kol.	Nahur?
Bhilala.	Dhangar.	Kurku.	Dhunwar?
Bhunjiash.	Gudba.	Mahto.	Goli?
Bhumia.	Kawar.	Manji.	Soura?
Bunjwar.			

The aboriginal Dravidian tribes are:

Gond.	Hulba.	Aguria?
Bhuttra Gond.	Khond.	Dhunwar?
Durweh "	Koi.	Nahur?
Mareo "	Maria or Gotawar.	Punkah?

Other occupants of the Central Provinces are:

Lodhi.	Chamar.	Ooryah.	Mahratta.
Parwar.	Kunbi.	Tiling Komati.	Jharia.
Kachi.	Reles.		

with a sprinkling of Rajputs, Brahmans, and Mahomedans in almost every district.

In the extreme west in Nimar are the Bhil.

From thence, going to the north-east, we find along the Satpura range the Kurku and Gond,—the Kurku belonging to the Kolarian family, and the Gond to the Dravidian.

The Kurku are not numerous, and are chiefly to be found in the hilly part of the Hoshungabad, and the adjoining northern part of the Chindwara district. In these localities they meet with the Gond, and a few Kurku are also found in Baitool.

The Gond are numerous in the plateau district of Son and in the south of Jubbulpur, and they are found also in the hilly parts of Jubbulpur.

The Gond, Byga, and Kol form a large section of the population of Mandla, and the Gond and Byga are also in the hilly parts of Balaghat south of Mandla.

The Ooriya occupy entirely the Sumbulpore district.

The Khond dwell in the country surrounding the Ooriya in Sumbulpore and to the south.

The Hindu races are numerous in Raipur and Belaspur, but a number of Gonds are scattered about, and the Gond are numerous in the wild parts of Nagpur and Chanda, and on the Pranbitha and Godavery river the Mahratta and Teling races meet.

The Mahrattas proper, consisting chiefly of Mahratta, Brahman, and Kunbi, scarcely exceed half a million in number, but, owing to the pro-

minent and powerful position so long occupied by them in the country, they have imposed their language and some of their customs on about twice their own number of menial and helot races, such as Dher and Mang, who, Mahratta in Nagpur, speakers of Hindi in the Nerbadda valley, only retain their individuality because they are too low in the scale for absorption. The Mahratta influence, however, did not penetrate much beyond the Nagpur plain, consisting of the lower valleys of the Wardha and Wainganga. To the south of this area the Teling races are intermingled with the settlers from the west, though not in large numbers. To the east Ch'hattisgarh is inhabited, after some fifteen centuries of Rajput ascendancy, mainly by Hindu races, except in the remote eastern district of Sumbulpore, which by language belongs to Orissa. The Chamars of Ch'hattisgarh are Satnami sectarians, disciples of Ghasi Das.

The northern line of demarcation may be drawn along the southern crest of the Satpura range; for though a few Mahrattas are found on the tableland, there are probably more Hindi speakers below the ghats in the Nagpur plain, and the almost universal language of the three Satpura districts, Son, Chindwara, and Betul, is Hindi.

The older settlers are in many districts called Jharria (from Jhar, underwood, forest), and are much looser in their observances than later comers of the same caste, eating forbidden food, and worshipping strange gods. For some generations after their arrival, the northern importations generally kept up their home connection by marriage, fearing to ally themselves with degenerate brothers, who may have carried their carelessness in social matters so far as to permit mesalliances, and perhaps even to have contracted some taint of aboriginal blood. In the Hoshangabad district the Ghorri (Mahomedan) kings of Malwa seem to have attained deification without distinction of persons, and a Hindu in difficulties would as soon invoke the Ghorri Badshah as any other supernatural power. At Murmari, ten miles from Bhandara, the villagers worship at the tomb of an English lady, ignorant, and probably careless, of the object for which it was erected. Gujars are among the steadiest members of the community, and have a great deal too much property of their own to admit the idea of professional cattle-lifting as a possibility amongst civilised people. The Lodhi, mere agricultural drudges in Upper India, have attained some distinction as swashbucklers and marauders in the Nerbadda country, and some of their chiefs still retain all the popular respect due to families which have forgotten to live on their own industry. On the other hand, there are Rajput who have taken to banking.

Damoh has a population of 262,641 souls; there are a few Mahomedans who are cotton carders, weavers, and the like. There are upwards of sixty different castes or sects of Hindus, amongst whom as under:

Kurmi,	34,907	Brahman,	23,666
Lodhi,	31,980	Ahir,	15,281
Chamar,	28,401	Bania,	9,783
Gond,	26,724	Rajput,	9,187

The Lodhi came from Bundelkhand three centuries ago.

The Kurmi from the Doab about A.D. 1620. The Kurmi are a large class of cultivators in the eastern

and central portions of Bengal, few in Dehli and in the Upper Doab. According to Sir Henry Elliot, under the different names of Kurmi, Kumbhi, Kunabi, Kumbhi, they extend throughout the greater part of Hindustan, Berar, and the Western Dekhan. They are famous as agriculturists, but frequently engage in other occupations. The Kurmi women, like the Jatni, assist the men in husbandry, and have passed into a proverb for industry:

'Bhalee jat koonbin kee, k'hoorpee hat'h
K'het nirawen apne pee ki sat'h.'

The Kurmi of the Hindustan provinces are said to have seven subdivisions, which are usually enumerated as K'hureebind, Puturya, G'horchurha, Jyswar, Canoujca, Kewut, and Jhooneya.

The Gond of Mandla have the Lamjina Shadi, in which the betrothed lad serves an apprenticeship for his future wife. A Gond girl, however, may exercise her own will and run off with a man, but it is quite allowable for her first cousin or the man whom she has deserted to abduct her from the man whom she has chosen. The Shadi Bandhoni is a compulsory marriage. In the Shadi Baitho a woman goes to a man's house. Widows re-marry either to a younger brother of their deceased husband, or to some other man.

To burn dead men is deemed the more honourable mode of disposing of the remains; women are always buried. When the father of a family dies, if well-to-do, they clothe the corpse in a new dress, and bury or burn the remains; his spirit is, however, supposed to dwell in the house till it be released, and till released, the spirit is the only object of worship in the house. After the funeral, a piece of turmeric and a pice are tied up in a cloth and suspended to one of the beams of the house. When the time comes to lay the spirit, the cloth is removed, and, with a portion of the flesh of a goat or a pig, is offered to the village deity; a feast is given to relatives, the elders, and the release is complete. Human sacrifices were made till after the middle of the 19th century at the temples of Kali at Lanji, and at the shrine of Danteswari in Bastar.

CEPHÆLIS IPECACUANHA is a native of New Granada in Brazil; its cinetic effects were known from time immemorial, and it received from the Portuguese the name of *rais d'oro*, or golden root. The father of the celebrated Helvetius established its utility, and was rewarded by Louis XIV. with a thousand louis-d'or.—*O'Sh.* p. 381.

CEPHALÆMIA OVIS or *Cæstrus ovis* occurs in Europe and the East Indies; it lays its eggs in sheep's nostrils, and the worm from it occupies the frontal sinuses, and gives rise to fatal disease.

CEPHALOCROTON INDICUM. *Bedd.*

Adenochlœna Indica, Bedd.

A very common tree in the dense moist forests on the Annamallays, Tinnevely, and Travancore ghats, at 1500 to 4000 feet elevation, generally on the banks of streams, and also sparingly in Coorg and S. Canara. It is in flower and fruit at all seasons. Timber is said by the natives to be very good for building purposes.—*Beddome, Fl. Sylv.* p. 261.

CEPHALOPODA, a class of molluscous animals, comprising many recent and fossil genera and species. The fossil Cephalopoda of the cretaceous

rocks of Southern India are numerous about Ootator and Trichinopoly.

CEPHALOTAXUS DRUPACEA. *Siebold and Zuccarini.* A splendid yew tree of China and Japan, hardy, and rising to 60 feet. *C. Fortunei*, *Hooker*, is a variety. *C. pedunculata* occurs in China.—*Von Mueller.*

CERAMBYX VATICA, or Sal grub, burrows in the wood of that tree, and is sought for by the woodpeckers. See Insects.

CERAMIC MANUFACTURES. The manufacture of porcelain, earthenware, etc., is an art which has for hundreds of years been perfected by the Chinese and Japanese, and has also been acquired to some extent by the Asiatic races who have embraced Mahomedanism. But the Hindu races, though making many beautiful models in clays, have never finished off their work by costly glazing. Their action in this matter has been owing to their views as to ceremonial impurity, which necessitates the destruction of earthenware from many ideal pollutions; and as to break up or throw away valuable porcelain would be ruinous, they use largely copper and brass utensils, which can be purified by fire or water, and common unglazed clay-ware of little money value, which can be thrown away. Urns of elongated shapes have been discovered in ancient Chaldaea; and in British India, fine specimens of common earthenware, ancient funeral, domestic, and cooking vessels, are dug out of the old tombs in the districts of Coimbatore and South Arcot. This kind of pottery has been found in many parts of India in tombs usually arranged in circles, each tomb being built of six slabs of stone, and occasionally surmounted by large mounds of loose stones and earth. They have been thought to resemble the Druidical tombs of England, and are supposed to be of great antiquity, there being no records of them extant. The pottery found in them usually consists of tall narrow cinerary urns of 18 or 20 inches in length, with three or four clumsy feet four inches in length, and of a variety of round, oval, and flattened vessels of different shapes and sizes, some having apparently been used for cooking and others as drinking vessels. The tall urns usually contain burnt human bones, teeth, and ornaments of brass or copper; they are made of a coarse clay, which have not been finished with care. Some of the flattened oval and rounded vessels are made of a fine dense clay that has been carefully prepared; the surfaces are variously ornamented with wavy or crossed lines of red and yellow, carefully painted. The pottery appears also to have been enameled, and it resembles the potterie antique vernissée et lustrée figured by M. Brongniart. There is great purity of form in most of the vessels, which resemble the Etruscan in the precision of the curves and in the angles at which the different surfaces meet. The art of pottery appears to have deteriorated in India since these articles were made, and one branch of it, viz. the smearing or thin glazing on the surface, is rarely practised. Nearly all the porcelain used in India by Mahomedans and Christians is imported from China and Great Britain.

In *Egypt*, the pyramids of Abu Rowash, which may very well date from the so-called second dynasty of Manetho, are surrounded by heaps of broken vessels. Beside this, the pottery made at

Thing Thao in China, in 2255 B.C., is modern. Scarabs made of earthenware, finely glazed with a turquoise colour, and bearing the names of such old kings as Cheops, Chephren, and others of the pyramid-building dynasties, are not at all uncommon. The potter's wheel is said to have been first used in Japan by a priest named Giyogi, a native of Idzumi, in 724 of the Christian era; and it is stated that the art of making pure porcelain was introduced into Japan about A.D. 1513.

The rarity of pottery all over Europe after the fall of the Western Empire is a curious fact. The practice of making encaustic tiles, which became one of the most beautiful of mediæval arts, betrays a revival; and by the beginning of the 8th century the Moorish wares of Spain had become famous. It is from an offshoot of the Moorish manufactories in the Balearic Islands that Majorica or Majorca ware gave its name to all kinds of glazed pottery. German stoneware, much of it very beautiful, reached perfection towards the end of the 16th century; but simultaneously the delicate Oiron pottery, or Henri II. ware, was begun by Hélène de Hangeot, a widow of noble family, in her castle of Oiron. Only about sixty-seven specimens remain; but it has been deceptively imitated of late years.

M. Janvier asserts that the very first porcelain made in Europe was in Venice, there being in the archives a letter, dated 1470, from Uielmo da Bologna, that seems conclusively to prove this fact. This art was, however, lost, to be revived again in France about 1695. The porcelain was what is known as 'soft,'—that is, the materials from which the paste, or body, was mixed, were not thoroughly fused together. In 1709, Böttcher, a German, after repeated failures, succeeded in producing true hard paste at Meissen, near Dresden. It was not for nearly a century that hard paste penetrated to Great Britain; but in 1800, Josiah Spode created, or rather perfected, what was practically a new ware, the bone phosphate porcelain, the only kind now made in England. The English porcelain is of a soft creamy colour, very agreeable to the eye, and very suitable for decoration. Nearly all the ordinary kiln colours can be used on it, and beautiful wares of all kinds are made. In Britain, before the 18th century, pottery was rarely used; the people ate from wooden trenchers, and drank from horn cups, up to the earlier years of the 19th century.

Earthenware or Common Pottery.—There are three distinct branches of this manufacture in India, which, though similar in their manipulation, are different in their results. The most common kind is the red porous earthenware used for pots and cooking vessels, the black used for similar purposes, and the fine white which resembles some of the biscuit earthenware of Europe.

The red porous earthenware of India differs very materially in quality according to the locality from which the clay is selected; some are made of a common coarse earthy loam, which has very little tenacity, and yields a brittle kind of pottery, neither susceptible of much finish, nor of being glazed. Most of the pottery of India is of this description; it is made on a curious principle, which is unknown in other countries, but which has probably been followed for many centuries in India. The Indian potter's wheel is of the simplest kind. It is a horizontal fly-wheel, the frame of

wood, the rim heavily laden with clay, two or three feet in diameter, weight 60 to 80 pounds, and is put in motion by the potter's hand, assisted by a stick; once set spinning, it revolves for from five or seven minutes with a perfectly steady and nearly true motion. The mass of clay to be moulded is placed on the centre of the wheel, and the potter squats before it on the ground. This machine has doubtless several defects, but it answers its purpose perfectly. The vessels, which are mostly of a round form, are thrown thick in the neck and upper parts or sides. They are cut off the wheel, and left open in the bottom, with vertical sides; they are then allowed to harden a little in the necks, and as soon as they will bear to be handled, the sides are thinned out by beating with a flat mallet upon a rounded stone or very hard round piece of wood held inside the vessel, which is turned about and beaten till it is closed. This is a very tedious and unsatisfactory mode of working, and the only recommendation is, that it makes a thin, light vessel, but at a great sacrifice of time. From ten to twenty-eight of these is a good day's work, while a skilful European thrower will turn out 800 in the same time. Good samples of this quality of earthenware are made at Travancore from a fine smooth micaceous loam, and the general forms are good, though heavy. A finer description of this ware is made at Hyderabad, from a tough, smooth plastic clay, and the articles are remarkable for elegance of form and extreme lightness of throwing. Some of the vessels are ornamented with gold leaf and coloured lac varnishes; others are made in imitation of Belser ware; some are painted white on a red ground; a few glazed and coloured with a soft lead glaze, composed of 24 parts Moordar Sing or litharge, 3 parts Ghar ka pat'har, and 1 part copper. Sandoor, or the red oxide of lead, may be substituted for the litharge. The Ghar ka pat'har should be well burnt, slaked in cold water, and afterwards reduced to a fine powder, and mixed with the litharge. The copper is mixed with its weight of finely-powdered sulphur, and heated in a crucible till a green scale has formed on it; it is then finely powdered, and mixed with the Ghar ka pat'har and litharge. The whole is again heated, and reduced to a fine powder once more. A small quantity of this powder is well mixed with wheat starch, and kneaded well for some time; water is then added, and it is strained through a fine cloth, and the glaze is gently rubbed in with the hand, after which the pottery is baked. This process of glazing pottery is very similar to that practised in Italy, Germany, and some parts of England, where paving tiles, green flower-pots, and common red earthenware are manufactured. The Ghar ka pat'har is probably either white felspar or pegmatite, a variety of granite very abundant in Southern India, and composed of three parts felspar and about one part of quartz; but at the bangle works at Loonar lake the stone used is chalcedony. The clay which is employed is probably more refractory than the common red clays of India, most of which begin to lose their shape or to become spongy at the temperature for melting such glazes. The native furnace is simply an excavation in the ground of variable depth, in which the ware is placed layer by layer, with dry reeds, straw, etc., and all are burnt together. This rude system must of course give way to the

European method, for the construction of all the superior kinds of vessels.

Black Earthenware in most instances is the red pottery blackened by the simple process of damping or checking the fire when it is beginning to decline, and thus throwing a great deal of smoke amongst the wares when the heat is not sufficiently intense to burn it off. A better and stronger kind of black earthenware is manufactured at Bangalore from a fine dense clay that contains both manganese and iron. This approaches the black stoneware of Egypt, and is strong and sonorous when struck.

White Earthenware.—Light and elegant goblets, butter pots and vases, are made at Arcot. This branch of the art is conducted with more care and cleanliness, attention being paid to the sifting of the materials and to the ornamenting and finishing of the articles. The material selected is a decaying white granite resembling the Cornish stone of England or the grauen of Germany. This is carefully washed and decanted to free it from sand or impurities; it is then allowed to subside, the water is poured off, and the soft clay is collected on a clean cloth and laid on a heap of white wood ashes to dry; a small percentage of alkali is thus absorbed through the cloth, and is incorporated through the mass by kneading. This decayed white granite is the true Kao-lin or porcelain earth of China and Europe. It is particularly abundant in India, and occurs in beds of enormous extent, and of every variety of colour. It possesses the valuable qualities of combining with a large percentage of silica, felspar, baryta, or other stony bodies, and of resisting the most intense heats; but in India it is employed alone, and produces a soft, brittle, porous ware, which is not susceptible of being well glazed. Numerous attempts have been made to glaze this description of pottery, but the glaze crazes or cracks all over the surface, and allows water to penetrate to the body. The reason is that the Kao-lin requires flint, felspar, or stone to open them, and exposure to a long-continued and steady heat before they are thoroughly burnt in the biscuit state. They also require a hard fritt or porcelain glaze, which cannot be prepared without expensive machinery. The firing also involves a great consumption of fuel, as the heat must be kept up steadily for 40 or 60 hours.

In China, the districts of Ping-le and Kot-kow in the province of Kiang-si are the most noted for their plastic clays of all the eighteen provinces of China. Very excellent plastic clays are also found in Wy-chow, in the province of Ngan-huy; the clays are soft, smooth, and, with one exception, uniform in point of colour. The excepted clay alluded to is streaked or veined, and is preferred by many potters. Kin-tee-ching, a town near Ping-le and Kot-kow, from the most ancient times has been pre-eminent for its china-ware factories. The clays are classed as Kao-lin and Pe-tun-tse. The Pe-tun-tse is taken from the quarries to the pounding mills, and then thoroughly crushed in large mortars, by means of pestles moved by water-wheels. It is then thrown into a pond and well mixed with the water. The heavier parts fall to the bottom, but the cream-coloured liquid on the top is drawn off into another basin, where it is well stirred by labourers who walk about in it. The heavier parts that sink

to the bottom are re-pounded and treated as before. The cream-like liquid being allowed to stand, deposits its fine clay, which is formed in moulds into bricks called *pak-tan*, or white bricks.

The Kao-lin clay is similarly prepared, and the bricks of the two clays are separately powdered and washed, and then mixed and formed into a paste, which is ready to be formed into vessels on the wheel, or by means of knives, and hardened in the sun or in a drying chamber. They are glazed by dipping them in a fluid mixture. The painting of the porcelain is by different artists, who take respectively the landscapes, rivers, trees, butterflies, birds, human figures, and buildings, and are again fired. The designs traced upon their porcelain or china are very inferior, but the colours used by the artists who paint these designs are far superior to any European colouring. The greater part of the modern Chinese porcelain, so abundantly imported into Europe, is made at King-ten, near Kin-kiang, and is enamelled or painted elsewhere. The yellow, so much prized by connoisseurs, indicates that it formed part of the annual tribute paid by the pottery districts to the emperor.

In Japan, the porcelain of the small island of Anadji, in the province of Miodo, requires much skill for its production. The porcelain from the city of Arita, in the province of Saga, is the most important of all the manufactures of porcelain in Japan. Kaga ware is made in the province of Tshi-kawa, and is the best known of all the Japanese porcelain. It is often of the egg-shell quality in thinness, beautifully translucent, and almost invariably ornamented in red and gold, or red only. The Satsuma pottery is the most famous of all the Japanese manufacture. It is made in the department of Kagosima in various potteries belonging to the Daimio Satsuma. The body is very hard,—indeed, half porcelain,—of a soft greyish stone colour, pencilled, daintily coloured, and decorated with birds, insects, flowers. Nagasaki porcelain closely resembles Kaga ware in its delicate thinness and decoration. Porcelain ware of Seto (owari) in Japan is famed for its colours.—*Gray*, ii. p. 230; *Mud. Exh. Jur. Itap.* See Porcelain; Pottery.

CERAM ISLAND is the second in size of the Moluccas, having an estimated area of about 10,000 square miles. The mountains are from six to eight thousand feet in height, sending down innumerable streams to the sea. The sago palm is more abundant and productive than on any of the adjoining islands. Cloves and nutmegs grow wild. The people of Ceram approach nearer to the Papuan type than those of Gillolo. They are darker in colour, and a number of them have the frizzly Papuan hair; their features are harsh and prominent, and the women are far less engaging than those of the Malay race. The Papua or Alfuro, the predominant type in Ceram, gathers his frizzly hair into a flat circular knot over the left temple, and places cylinders of wood, as thick as one's fingers and coloured red at the ends, in the lobes of the ears. They go almost naked; but armlets and anklets of woven grass or of silver, with necklaces of beads or small fruits, complete their attire. The women have similar ornaments, but wear their hair loose. All are tall, with a dark brown skin, and well marked Papuan physiognomy (Wall. ii. 41). Of twenty-eight words of the language of Ceram, nine of the words

are Malay, two Javanese, and seventeen are common to these two languages. *Casuarus galeatus* inhabits the island of Ceram only. It is a stout, strong bird, standing five or six feet high, and covered with long hair-like feathers. Its head has a large horny casque or helmet. The Ceram box manufacture has recently excited a degree of interest from the close resemblance it bears to the ornamental work of the North American Indians. A corresponding manufacture is met with in Borneo, with similar ornamental work of shells or wampum, but coarser.—*Bikmore*, p. 210.

CERAM LAUT. A cluster of islets are lying off the south-eastern extremity of the large island of Seran or Ceram. They produce tortoiseshell, mother-of-pearl shell, beche de mer, wild cinnamon, wild nutmegs, and birds of paradise. Ceram Laut is the most westerly and the largest of the range of small islands which extend 15 or 18 miles east and west. Ceram Laut means Ceram lying to seaward. The islands are low. Ceram Laut is the great place to which the Bugi carried the Papuan slaves stolen from New Guinea. Ceram Laut and Goram are seldom visited by Europeans. The natives of the Ceram Laut islands repair chiefly to the northern coast of Papua, or the island of New Guinea, from which they are distant only about a day's sail, to procure the various articles of produce we have mentioned, that part of this vast island being called by the Bugi, Papua Nothing. Mother-of-pearl shells are, however, procured by the Bugi themselves in greater quantities at the Aru islands.

CERASTIUM CORDIFOLIUM. *Roxb.* A herbaceous annual of Bengal. *C. Indicum*, *W. and A.*, is chickweed. *C. dichotomum* and *C. vulgatum* also occur.

CERASUS, a genus of plants of the natural order Amygdaleæ, which are arranged into the true cherries, the bird cherries, and the cherry laurels. Wallich and Roxburgh mentioned *C. Nepalensis* of Nepal and Kamaon, *C. puddum* of the Himalaya, and *C. triflora* of China. Dr. Cleghorn mentions the Gilas, Kashmir cherry, as from one variety of *cerasus*, and Aru ballu, the Kūbul cherry, as from another variety, both grown in gardens of the N.W. Himalaya. Griffith mentioned that there is in the Tenasserim Provinces one species of the almond tribe which abounds in prussic acid. *C. capronia*, the cherry tree of Europe, the Himalaya, Caucasus, etc., in Kashmir is called Aloo baloo. The kernel of this fruit contains the elements of hydrocyanic acid, and is accordingly much used for communicating its peculiar flavour to brandy and liqueurs. *C. Japonica* is a native of Japan, but long known in English gardens as the double dwarf almond. It is one of the most beautiful flowers that appear in the month of March. *C. lauro-cerasus* is the cherry laurel of Trebizond and Afghanistan, and is cultivated in Europe. The distilled water of the leaves is much used in Europe as a vehicle for opiates and other anodyne medicines, in doses up to one ounce.—*O'Sh.* p. 827. See Cinnamomum.

CERASUS CORNUTA. *Roxb.*

Prunus padus, *Linn.*

Bird cherry, . . . ENO. Jamuna, . . . PANJ.
Himalaya bird cherry, ,, Pans, . . . KASHAN.

This is found in the Sutlej valley between Rampur and Sungnam, at an elevation of 7000 to

10,000 feet about Simla. It grows to a large size, and its wood is esteemed.—*Cleghorn, Pajjab*, p. 65.

CERASUS PSEUDO-CERASUS, the Ying-tau or Chinese cherry, is met with in Kiang-nan, Hu-peh, and Honan; but there seem to be several varieties, some of which have been introduced into England. It has a bright red fruit.—*Smith*.

CERASUS PUDDUM. *Wallich*.

Prunus puddum, Lindley.

Common bird cherry, *ENO.* | Paddam, Pyah, *PANJ.*
Wild cherry, | Chumiar, Amulguch, . .

This is found in the Sutlej valley between Rampur and Sungnam, at an elevation of 3000 to 7000 feet. Occurs in Kaghan as far as the Indus; also in Kamaon. It is a sacred tree among the Hindus. The bark is called pudmak, and used in medicine by the natives, as it is also in America.—*Cleg. Panj.* pp. 65, 81.

CERASUS SERRULATA, the fine-toothed cherry, is a native of China. *C. Nipalensis, Ser.*, is a small tree of Nepal and Kamaon. *C. triflora, Wall.*, is a shrub of Nepal and China.

CERASUS VULGARIS, common cherry.

Prunus cerasus, Linn.

Yuh-li, *CHIN.* | Gilas, *PANJ.*

This grows in China; is found wild in the woods of Asia Minor, where it acquires a very large size. Dr. Royle considers the cherry to be wild in Kashmir.—*Eng. Cyc.* p. 826.

CERATONIA SILIQUA. *W.* Carob tree.

Khirnoob shamees, *ARAB.* | Locust bean, . . . *ENG.*
Nubtee, Kharnob, . . . | Saint John's bread, . .

The carob tree was introduced into the Saharunpur gardens, and has been tried at Madhopur and other places in the Panjab, as at Lahore, and succeeded fairly. A thick, pulpy, flat, brown, curved pod contains hard red seeds resembling those of the tamarind, embedded in red fibrous pulp. Used by the natives in coughs attended with much expectoration. The pods are used for food, both for men and horses, along the coasts of the Mediterranean, and are said to improve the voice of singers. The seed of this tree is the original of the carat of jewellers.—*Powell, Handbook*, i. p. 342; *Spry's Suggest.* p. 54; *Ainslie*.

CERATOPETALUM APETALUM, the coachwood, leather-jacket, and light-wood of New Zealand and Australia, is abundant about the Illawarra district. It grows to 45 and 50 feet high and 6 feet round. Its wood is soft, fine-grained, light, and has an agreeable fragrance. It is valued for cabinet work and coach-building, but will not bear exposure to wet. *C. gummiferum*, the Christmas tree, officer tree, and light-wood of Australian colonists, is used for decoration at Christmas times. It is wild near Sydney; grows straight to 15 or 30 feet in height.—*G. Bennett*.

CERATOPHORA STODDARTII, a lizard of the Kandyan hills, remarkable for having no external ear. It acquired its generic name from the curious horn-like process on the extremity of the nose. This horn, as it is found in mature males of ten inches in length, is five lines long, conical, pointed, and slightly curved up.—*Tennent*.

CERATOPTERINA, a group of fishes, in which occur—

Dicerobatis japonica, M. and H., Japan.

D. eregoodoo, Cant., Indian seas.

D. kuhlii, M. and H., Indian Ocean, Archipelago.

Ceratoptera Ehrenbergii, M. and H., Red Sea.

CERATOSTEMA. *Roxb.* A genus of plants. Roxburgh described *C. vaccinnacea, Roxb.*, and *C. variegata, Roxb.*, the jalamoot of Bengal, both of them shrubs. The latter is a native of mountain forests near Chittagong, Sylhet, and on the Garo hills, where it blossoms during the cool season, when its numerous, most beautiful, large, variegated, rosy flowers are highly ornamental; the seed ripens in July.—*Roxb. ii.* p. 413.

CERBERA, a genus of plants belonging to the natural order Apocynaceæ. Dr. Roxburgh described *C. fruticosa, C. odallam, Gart.*, and *C. maculatum, Willd.* *C. tanghin*, the tanghin tree, was formerly used in Madagascar for the trial by ordeal. *C. thevetia* is a large shrub with leaves like the oleander, and bell-shaped yellow flowers. Its milk is poisonous, bark bitter and purgative, also said to be powerfully febrifuge, two grains being affirmed to be equal to a common dose of cinchona. According to Royle, perfectly naturalized in India.—*O'Sh.* p. 446; *Riddell*.

CERBERA MANGHAS. *Linn.*

C. lactaria, Buch. | *C. quaternifolia, Roxb.*
Kullooa, *BURM.* | Kanor zard, . . *PERS.*
Pili karbir, *HIND.*

This tree grows in Pegu, Tenasserim, Tavoy, Penang, Singapore, Java, Moluccas, and the adjacent islands, in wet situations. Its fruit is used very extensively by the Burmese, to make an oil which they burn in their lamps and use to anoint their heads. The kernels are described as emetic and purgative. The leaves are said to be used in Java as a substitute for senna, and the bark is said to possess similar properties.—*Roxb.*; *Voigt*; *Mason*; *Eng. Cyc.*

CERBERA ODALLAM. *Gartn.* Odallam tree. *Cerbera manghas, Sims.* | *Tanghinia odallam, Don.*

Odallam, . . . *MALEAL.* | *Kat-arali, TAM.*

Common on the western coast of India, Maldives, and Laccadives. Wood white and spongy. Nut narcotic and poisonous. The green fruit is employed to kill dogs.—*Roxb. i.* p. 692.

CERBURA, in the mythology of the Hindus, a varied-coloured dog, one of the dogs of Yama. He has a second dog, called Syanna, or black. Cerbura is undoubtedly the Cerberus of the Greeks. Cerbura has other names, all meaning spotted, but it is also called Tri-sira or three-headed. See Yama.

CERCOTRICHAS, a genus of birds in India, known as bulbuls, *C. erythropterus, C. Luzonensis, C. macrourus*. See Bulbul.

CEREAL GRAINS of several kinds are cultivated for food. The seeds of all the graminæ, those of the daniel alone excepted, are capable by cultivation of becoming alimentary. The value of grains, generally speaking, is directly as the size of the caryopsis, and inversely as the thickness of the pericarp. When the grain abounds in perisperm, it is heavy; when the envelope is thick, the grain is, on the contrary, light, thus:—

100 seeds of wheat weighed	4.50 grains.
100 " barley "	3.85 "
100 " rye "	2.60 "
100 " oats "	2.50 "

The chemical composition of the grain influences materially the quality of the resulting bread. If the gluten be absent, no fermentation takes place in the dough; if the gluten be in excess, the bread is heavy and acid. Wheat flour may be considered the type of all that is suitable for alimentary

purposes, and in the degree of deviation from this standard consists the inferiority of the other grains. The grains or ears of nearly all the cereal grasses are subject to diseases resulting from attacks of parasitic fungi, animalcules, and insects. The liability of the seeds of grasses to parasitic infection is explained by the large amount of nitrogenized matter contained in them, and to their softness of texture; and some of the diseases occasion the greatest injury to the agriculturist. Little is known as to the native countries of the cereal grains. The prevalence of particular grains in the earth's zones and continents, has resulted not alone from climate, but has been determined by the civilisation, industry, and traffic of the people, and often by historical events. Without cultivation, all the cereals degenerate. As they now exist, they seem to have been greatly improved from their natural state. Wheat has five, six, or seven distinct species, barley three, and oats two, three, or four. In the south and east of Asia, the following grains belonging to the grasses (*Panicaceæ* or *Graminaceæ*) are the more largely cultivated:—

Eleusine coracana, *Gart.*, ragi.
E. stricta, *Roxb.*, "
Hordeum distichon, *Linn.*, barley.
H. hexastichon, *Linn.*, common barley.
H. vulgare, *Linn.*, spring barley.
Oplismenus frumentaceus, *Roxb.*
Oryza sativa, *Linn.*, rice, black and red.
Panicum miliaceum, *Willd.*, common millet.
P. miliare, *Lam.*
P. italicum, *Linn.*, Italian millet.
P. Germanicum, *Linn.*, German millet.
Paspalum stoloniferum, *Linn.*
Pennisetia spicata, *Willd.*, spiked millet.
Poa Abyssinica, *Aiton*, teff plant.
Sorghum bicolor, *Willd.*
S. cernuum, *Willd.*
S. saccharatum, *Pers.*
S. vulgare, *Pers.*, great millet.
Triticum vulgare, *Vieill.*, wheat.
 var. (a) *aestivum*, two varieties.
 " (b) *hybernum*, " "
Zea mays, *Linn.*, maize.

	Sorghum vulgare.	Pennisetia spicata.	Zea mays.
Water,	11.95	11.8	13.5
Nitrogenous substance,	8.65	10.13	9.9
Dextrin,	3.82	..	..
Sugar,	1.46	..	..
Fat,	3.9	4.62	6.7
Starch,	70.83	71.4	..
Starch and dextrin, . . . . .	..	..	64.5
Cellulose from bran, . . . . .	..	..	4.0
Ash, . . . . .	..	..	1.4

	Wheat.	Rice.	Panicum miliare.
	Flour. Bran.		
Water,	14.0 10.3	14.0	12.22
Nitrogenous substance,	14.6 12.48	7.242	9.27
Dextrin, . . . . .	..	..	0.13
Sugar, . . . . .	..	0.390	1.60
Fat,	1.2 2.82	0.900	7.43
Starch,	59.7 22.02	75.918	49.04
Dextrin and sugar,	7.2 5.8	..	..
Cellulose from bran,	1.7 43.98	..	..
Salt,	1.6 2.62	..	..
Gum or dextrin, . . . . .	..	1.670	..
Silica, . . . . .	..	..	0.11

	Cleer arretinum.	Dolichos unilobus.	Ervum lens.	Cajanus indicus.
Water,	11.34	12.03	11.74	10.63
Nitrog. substance,	22.70	23.27	27.96	22.18
Fat,	3.76	2.20	1.47	1.95
Starch,	63.18	59.38	56.36	62.13
Mineral matter,	2.60	3.19	3.48	3.11

—Hassall.

CERES. The representative of Ceres, amongst the Hindus, is Lakshmi or Sri. Amongst the

Rajputs, Gouri seems to be the analogue of Ceres, and on the festival of the Ahaire, or Muhurat ka Shikar, they hunt, slay, and eat the wild boar.

CEREUS, a genus of the Cactaceæ. About twenty species introduced into India. Many of the species produce beautiful flowers. The stems are angled and jointed; the blossoms open in the evening or during the night, and die away towards the morning. *C. flagelliformis* of S. America, which grows in Asia and Africa, is the creeping cereus; *C. grandiflorus*, *Mill.*, is the night flowering cereus. *C. hexagonus*, *Linn.*; *C. senilis*, the old man's torch thistle; *C. speciosissimus*, *C. triangularis*, *Linn.*, and *C. truncatus*, occur.—*Voigt*.

CERIOPS CANDOLLEANA. *Arnot*. Chowree or Kirree, *SIND*. A tree of *Sind*. Wood used for building boats and barges; makes useful knees. The barks of *Cerriops candolleana* and *Rhizophora mucronata* are much used in *Sind* in tanning.

CERIOPS ROXBURGHIANUS. *Arnot*.

Rhizophora decandra, *R.* | *Bruguiera decandra*, *Gr.*

Garan, *BENG.* | Ka-by-ain, *BUHM.*

Grows on all the coasts of tropical Asia. Wood dark reddish, hard, and durable; flowers large, white, and sweet-scented. The bark is used in India for dyeing.—*Voigt*; *Malcolm*.

CERIORNIS MELANOCEPHALA and *C. satyra*, Argus pheasants.

CERITHIADÆ, the Cerite family of molluscs, comprising several genera, mostly recent.

CERNE, the name given by the Portuguese to the island of Mauritius on its discovery. Subsequently, while in the possession of the French, it was called l'île de France, the Isle of France.

CEROPEGIA, a genus of plants of the nat. ord. Asclepiaceæ. They are creepers and trailing plants. *C. Arnottiana*, *Wight*, is the Oo-ta-lung of the Burmans. *C. bulbosa*, esculenta, lucida, juncea, Lushii, elegans, Stephanotis, stapeliæformis, and tuberosa occur in India. *C. bulbosa*, *Roxb.*, occurs in many places, and every part of it is eaten by the natives. Its roots are of the size of a small apple, and when fresh taste like a turnip.—*Roxb.*

CEROPEGIA ESCULENTA. *Edgeworth*. Galot, *PANJ.* In Multan its acid leaves and tubers are used as a vegetable.—*Dr. J. L. Stewart*.

CEROPEGIA JUNCEA. *Roxb.* A twining plant; grows all over India. It is succulent, with an agreeable acid taste, and is much eaten as a salad by the people.—*Mr. R. Brown*.

CEROPEGIA TUBEROSA. *Roxb.*

C. candelabrum, *R.*

Bach-chali-manda, Pulla manda, *TEL.*

The word manda is applied to several species of ceropegia.—*Voigt*.

CEROSTERNA GLADIATOR, a longicorn beetle of India. It eats the bark of casuarina trees.

CEROXYLON ANDICOLA, or wax-palm, a native of the Andes of Columbia, of immense height, often attaining 150 to 180 feet in its length. From fissures in the trunk there flows spontaneously a kind of grey waxy substance, containing two-thirds of resin and one-third of wax identical with that formed by the bea. Melted with a little suet, this wax makes excellent tapers. Its introduction into India merits attention.—*C. australi*, *Martins*, is of Juan Fernandez; *C. Klopstockia*, *Martins*, of Venezuela.—*O'Sh.* p. 641; *Von Mueller*.

CERRUS.

CERRUS, the Ohee valayati of the Jullandhur Doab. It grows to the height of about 25 feet. Wood of the old tree brownish, soft, brittle, light. Not ordinarily used as a timber for large buildings, but employed by farmers in their buildings.

CERTHIA FAMILIARIS with C. Himalayana, etc.; and not unfrequently the exact European species inhabit India.

CERTHILAUDA DESERTORUM of Spain and N. Africa, inhabits Sind; and the Ammonites Lusitania occurs in the deserts of N.W. India, being replaced further south by A. phoenicurea.

CÉRUSE, white lead, carbonate of lead.

Fen sil, . . . CHIN. | Safeda, . . . HIND.
Carbonate of lead, Eng. | Cerussa, . . . ITAL.

Used as white paint.

CERVIDÆ, a family of mammalia belonging to the tribe Ruminantia. They are remarkable for their fine horns, called antlers, which they shed annually, and the females of the reindeer, of all the family, possess horns normally. The sub-families of the family Cervide comprise the Cervinae, or true stag, with the genus Cervus, and the Rutinae, which includes the genera Rucervus, Rusa, Axis, and Cervulus. But the deer tribe of Southern and Eastern Asia have presented unusual difficulties to the scientific men of Europe. Indeed, Schinz (Nachtrage zum 2ten Bande) suggests that under the denomination Cervus muntjak six different species lie hid, viz.:

1. Cervus styloceros, Schinz, syn. C. muntjak, Linn. apud Ogilby, hab. Himalaya;
2. C. Ratwa, Hodgson, hab. Himalaya;
3. C. albipes, F. Cuvier, hab. India;
4. C. muntjak, Raffles and Horsfield, hab. Sumatra, Banka, Borneo, and Java;
5. C. Reevesii, Ogilby, hab. China;
6. C. Antisiensis, Pucheran, hab. Andes;

and the names applied by sportsmen are almost as varied as the synonyms of the scientific writers. In the genus Cervus of the sub-family Cervinae, the horns of adults are typical, with two basal tines, a median tine, and the summit more or less branched. The red deer of Scotland is typical of this group; two species, outliers of Northern and Central Asia, occur in British India, one in the extreme N.W., and the other in the extreme N.E. corner of the province, and others in Eastern Asia. The name of the tribe is obtained from cervus, the stag.

(a) C. Wallichii, Cuv., tailless deer of India.

C. pygæus, Hardwicke, Kashmir Stag.

Red deer, . . . ENG. | Maral; Goo-koohi, PERS.
Bara Singha, . . . HIND. | Gevezu, . . . "TIBET.
Jezrail, . . . " | Giana, . . . "TIBET.

Occurs in Persia, Nepal, and the sal forests.

(b) C. affinis, Tibetan stag of Hodgson.

Sal forest stag, . . . ENG. | Stora, . . . TIBET.
Sikkim stag, . . . " |

Occurs in Tibet and the sal forests.

(c) C. sika, the sika of Japan, of a dark brown colour, with slender horns.

(d) Panolia acuticornis, Gray.

P. Eldii, Gray. | C. frontalis, M'Clelland.
Rusa lyratus, Schinz. | C. Eldii, Cal. J. N. H.
Cervus lyratus, Schinz.
Sangrai, . . . HIND. | Sangrai, . . . HIND.

Occurs in the Manipore valley and in the Malay Peninsula; is exceedingly wary.

(e) Rucervus duvaucelli, Cuv.

R. elaphoides, Hodgson. | C. elaphoides, Hodgson.
Cervus duvaucelli, Cuv. |
Bara Singha, . . . HIND. | Buraya, . . . HIND.

CERVIDÆ.

Spotted deer of the Sunderbuns. It inhabits the eastern and northern skirts of Bengal and Hindustan, and the Sunderbuns. It inhabits reedy marshes and the islands of great rivers, never entering the mountains or forests. The tail is short, with no caudal disc and no heavy mane.

(f) Rusa equina, Cuv., Ham. Smith.

Cervus rusa, Raffles.	Rusa equina, Gray.
C. equinus, Cuv.	R. hippelaphus.
C. hippelaphus, Elliot, Cat.	
Rusa etam of the people of Sumatra.	Sambur deer of Bennett.
Rusa etam, . . . MALAY.	Sambur of the Mahrattas.
Rusa kumbang, . . . "	Sambara, . . . SANSE.
Kumbang, . . . "	Eland or elk of Dutch sportsmen.

It inhabits the Dekhan, S. Mahratta country, Sumatra, Borneo, and Banka. It is of a pale brown colour. Considering the similarity of colours and size of C. equinus, hippelaphus, and Aristotelis, Mr. Elliot is probably right in considering all three as varieties of the great Indian stag, described by Aristotle under the designation of Hippelaphus; and C. Peronii, Cuv. (Cerv du Timor), may probably be added as a fourth variety.

(g) Rusa hippelaphus, Cuv.

Cervus hippelaphus, Cuv.	Rusa Moluccensis of Gray, Smith.
C. Timorensis, Muller.	
C. Moluccensis of Quoy and Gaim.	
Sambur of India.	Hippelaphe of F. Cuv.
Mijangan Banjoa, Malay of Java.	Cerv d'eu of Duvaucell.
Cerv noir du Bengal of Cuv.	Rusa of Java and Sumatra.
	Rousaitan "

It inhabits the great forests of India, Bengal, Sumatra, and Java. It is about the size of the common stag. In winter is of a greyish-brown, and in summer it is of a brighter and more golden brown. The croup is pale yellow, and the tail is brown, terminated by rather long hair, which is rough and hard; and all about the head and neck and cheeks grows long, like a mane and beard.

(h) Rusa Aristotelis, Cuv., Gray, Sambar.

Cervus Aristotelis, Cuv.	C. heteroceros, Hodgson.
C. hippelaphus, Ogilby.	C. heteroceros, Schinz.
C. unicolor, H. Smith.	
Jarai; Jerrow, . . . HIND.	Daim noir de Bengal of Duvaucell.
Cerv de Coromand. of Cuv.	Sambur deer of Bennett.

It inhabits the great forests of India. It is not gregarious, and ruts and drops its horns in spring. Mr. Hodgson describes four varieties of this deer.

(i) Rusa dimorphe, spotted rusa.

Gower, . . . HIND. | Gever, . . . HIND.
Occupy the sal forests of India. Colour of a red brown.

(j) Rusa Peronii, the smaller rusa; inhabits Timor, Lombok, Bawian, and Ternate.

(k) Rusa Philipinus.

Cervus Marianus, Cuv.	
The Philippine rusa.	Cerv de Philippines of Desmarest.

(l) Rusa lepiola, the Sundevall rusa, a native of Java, scarcely as large as a roebuck.

(m) Axis maculatus, Ham. Smith, Gray.

Axis plinius, Erxleben apud Gmelin.	Cervus nudipalpebra, Ogilby.
Cervus axis, Elliot.	Black var.
C. pseudaxis, Gerrois.	Axis major, A. medius, A. minor, Hodgson.
Axis maculatus.	Thou langna of the Terai.
Rusa bunga, Malay of Peninsula.	Hog-deer.
Spotted deer of India.	Spotted hog-deer of Hodgson.
Chitra, . . . SANSE.	
Chital deer of Hodgson and Elliot.	

Inhabits India, the Malay Peninsula. In size and form it resembles the fallow-deer, and at the shoulder its height is two feet six or seven inches. The ground colour of the skin is at all times a rich fawn spotted with white, but is nearly black along the back and snow-white below. It has a white longitudinal line on the flanks. It lives near water in the jungles; feeds at night. It is timid, indolent, and gentle; is easily domesticated, and propagates in captivity. It is the spotted deer of Indian sportsmen. The skin and horns of this graceful deer are articles of commerce. In the years 1851 to 1855 Liverpool imported about 700 skins and 20,000 horns a year. They are not so generally distributed as the sambur, but in many districts are far more plentiful. They go in herds of from six to sixty. So many as six have been killed by one gun during the brief cool stalking hours of the morning and evening. *A. porcinus*, *Cuv.*, is the hog-deer of Jerdon.

Cervus muntjak, *Zimm.* *Cervulus aureus*, *Jer.*
Kankuri, . . . CAN. | Bekra, . . . MAHR.
Jungli Bekra, . . . DUKH.

This animal does not seem to differ in any respect from the kijang of the Eastern Islands. A young male of this species is of a deep chestnut colour, which becomes browner as the animal grows older. It obtains its Canarese name from its habit of frequenting the kans or natural forest gardens.

(n) *Hylaphus porcinus*, *Sunder.*

Cervus porcinus, *Zimmer.* | Var. *Axis niger*, *Dr. F. B.*
C. hylaphus var. 3, *Cuv.* | *Ham.*
Para, . . . HIND. | Porcine deer of Pennant.
Parha, . . . " | Sugoria, . . . HIND.
Khar, . . . " | Shgoria, . . . "
Laghuna, . . . " | Brown porcine axis of
Hog-deer, . . . ENG. | Hodgson.

Inhabits Ceylon, India, and Assam. Its legs are shorter than those of the axis; it has no black dorsal streak, and no white streak on the haunches. Horns generally short, with short snags. They live in herds on the plains, and do not ascend mountains.

Cervus pumilus of H. Smith is supposed to be a variety, and *Cervus dodur* of Royle is supposed to be a distinct species.

(o) *Cervulus vaginalis*, *Bodd.*, *Gray.*

Cervus muntjac, *Zimm.* | *Cervus plicatus*, *Foster.*
Prox., *Zimm. & Sundev.* |
Rib-faced deer of Pennant. | Kidang of the Javanese.
Chevreuil des Indes of | Kijang of the Sumatrans.
Allanand. | Muntjak of the Sundan-
The Rue of Europeans in | ose.
Borneo.

It inhabits Sumatra, Banka, Borneo, and Java. Its height at the shoulders is about 2 feet 2 inches. On its face are two rough raised folds of skin, marking it with the letter V, the point below; colour, reddish brown or a light brown; belly and front of thighs, pure white. In Java it occupies districts with long grass, and the *Saccharum* (*Holcus*) *spicatum* (allang-allang, JAV.), and *Phyllanthus emblica* are its favourite food; but *Hibiscus*, *Grewia*, *Urena*, and other malvaceous plants are eaten by it. It is impatient of confinement. The points of its horns are turned forwards; it is about the size of the antelope, which, with the exception of the horns, it resembles in general appearance.—*Low's Sarawak*, p. 76.

(p) *Stylloceros muntjac*, *H. Smith.*

Cervus muntjac, *Zimm.*, *Morsf.*, *Sykes*, *Elliot*,
Boddart, *Schreber*, *Marsden*, *Desmarest*, *Linn.*

Cervus vaginalis, *Fodderl.*
C. moschatus, *Blainville.*
C. sub-cornutus, "
C. moschus, *Desmarest.*
C. aureus, *Ham. Smith.*

Chevreuil des Indes of Al-
lamand.

Cervus Philippinus, *Smith.*
C. albipes, *F. Cuv.*
C. ratwa, *Hodgson.*
Muntjac vaginalis, *Gray.*

Kidang, . . . MALAY.

It inhabits the Malay Peninsula, Java, Sumatra, Banka, Borneo, Tenasserim, Nepal, Assam, Bengal, S. Mahratta country, Dekhan.

(q) *Cervulus moschatus*, *De Blain.*

Cervus muntjac, *Sykes*, | *Cervus Ratwa*, *Hodgs.*
Elliot. | Prox. Ratwa of Sundevall.
C. moschus, *Desmarest.* | *P. Albipes* of Wagner.
Stylloceros ratwa, *Hodgs.*
Barking deer of Nepal.
Ratwa, . . . HIND. | Bekra Mahr. of Elliot.
Kaher, . . . " | Rib-faced deer of Pennant.
Buker of Mahrattas. | Jungle sheep.

Inhabits India, living in forests in the mountains. It is of a bright reddish yellow colour, with the chin and gullet whitish. The hair is not ringed as in *Cervulus Reevesii*; six or eight live together. Horns of male fall in May; the females have bristly tufts ending in a knot instead of a horn.

(r) *Tragulus kanchil*, *Gray.*

Moschus palandok, *Mars-* | *Moschus kanchil*, *Raffles.*
den. | *M. fulviventer*, *Gray.*
Javan musk, . . . ENG. | Kanchil, . . . MALAY.
Chevreuil de Java, *Fit.* | Palandok, . . . "
of Buffon and Gray.

Inhabits Malay Peninsula, Penang, Lancavay Islands, Sumatra, and Java. The largest adult measures from nose to root of tail 1 foot 6½ in.

(s) *Tragulus Javanicus*, *Pallas.*

Moschus Javanicus, *Gmel.* | *Moschus Napu*, *F. Cuv.*
lin, Pallas apud Raffles. | *Cervus Javanicus.*
Moschus Indicus, *Gmelin.*
Oslick Napu, MALAY.

Inhabits the Malay Peninsula, Sumatra, Java, and Borneo.

(t) *Cervulus Reevesii*, Chinese muntjak. A native of China. *C. vaginalis*, *C. moschatus*, and *C. Reevesii* breed together.

(u) *Cervulus Pygargus*.

Cervus Pygargus, *Pallas.*

Ahu, . . . PERB. | Tailless deer of Pennant
Siaga, . . . TARTAR. | and Shaw.
Tailless roe of Pennant. | Dikajakos, . . . RUSS.

A native of Central Asia.

(v) *Næmorhedus Sumatrensis*, *Ham. Smith.*

Antelope Sumatranus, *Pen-* | *Antelope intus-capularus*,
nant and Raffles. | *Lichtenstein apud Schinz.*
Kambing utan, . . . MALAY. | Cambtan of F. Cuv.

Numerous on the Malay Peninsula, but frequents the steepest hilly localities; is shy and active, and exceedingly difficult to obtain.—*Journ. As. Soc. Bengal*; *Eng. Cyc.*; *Horsfield and Moore*, *Cat. E. I. Muscum*; *Jerdon.*

CESAR FREDERICH, a merchant of Venice of the sixteenth century, who wrote of Tenasserim. CESARIAN ERA of Antioch was established there in celebration of Caesar's victory at Pharsalia, A.A.C. 47.

CETRACCION PHILIPPI, the Port Jackson shark or dogfish, usually 3 to 4 feet long.—*Bennett.*

CETACEA, an order of mammals which live in the ocean. Amongst them are the whales, the largest of creatures now existing; also the dolphins, the porpoises, and the dugong. They have fin-like anterior extremities, the posterior extremities being absent, or rather their place supplied by a large horizontal caudal fin or tail. They have no hair on their skin, have no outer ear, and the

bones of the neck are so compressed as to leave the animal without the appearance of a neck. Some of them eat plants, or are phytophagous; some are zoophagous, or animal-eaters. Seven new species of cetaceans have recently been described from the Bay of Bengal, six of the family Delphinidæ, the seventh belonging to the sperm whales Physeteridæ, to be called *Physeter (Euphysetes) simus*. Professor Owen described the following species from collections made mostly near Vizagapatam by Sir Walter Elliot, — *Delphinus fusiformis*, *D. godama*, *D. lentiginosus*, *D. maculiventer*, and *D. pomeeagra*; also *Phocæna brevirostris*, and *Physeter simus*. The Cetacea are divided by naturalists into two great families, the Balænidæ or whales, the Delphinidæ or porpoises.

Whales.

(a) *Balæna mysticetus*, the Right Whale.

<i>B. Grœnlandica</i> , <i>Linnæus</i> .	<i>B. Rondolettii</i> , <i>Willoughby</i> .
<i>B. vulgaris</i> , <i>Brisson</i> .	
Right whale, . . . Eng.	<i>Var. a.</i> Nord kapper whale.
Whalebone whale, . . . "	Nord caper whale.
Greenland whale, . . . "	<i>Var. b.</i> Rock-nosed whale.

According to Lesson, inhabits all the seas of the globe.

(b) *Balæna marginata*, *Gray*, the western Australasian whale, has very long and slender baleen, with a rather broad black edge on the outer or straight side.

(c) *Balæna australis*, *Des Moulins*.

B. antarctica, *Lesson*.

Right whale of South Sea whalers,	Common black whale of Sir James Ross.
Southern whalebone whale of Nun.	

Inhabits the South Seas; and multitudes were seen by Sir James Ross in very high latitudes. It is of a uniform black colour.

(d) *Balæna Japonica*, the Japan whale, is an inhabitant of the coasts of Japan, which it visits periodically. Its head is covered with barnacles.

(e) *Balæna antarctica*.

B. antipodarum, *Gray*.

New Zealand whale. | *Toku Peru*, New Zealand.

Inhabits the New Zealand ocean.

Finners.

(f) *Balænoptera Indica*, *Blyth*, is the Indian fin whale. *B. boops*, *L.*, the great rorqual, and *B. musculus*, *L.*, the lesser rorqual, are both found in European seas.

(g) *Megaptera kuzira*, the kuzira. It inhabits the Japanese seas.

(h) *Physalis Iwasi*, the Japan finner. It is very rare. In 1760, one 25 feet long was cast ashore at Kii.

(i) *Physalis antarcticus*, *Gray*, inhabits the New Zealand seas.

(j) *Physalis Braziliensis*, Bahia finner, was brought from Bahia.

(k) *Physalis australis*, the southern finner, inhabits the seas of the Falkland Islands.

Sperm Whales, *Physeteridæ*.

(l) *Catodon macrocephalus*, northern sperm whale.

<i>Physeter macrocephalus</i> , <i>Linn.</i>	<i>P. trumpo</i> , <i>Bonnaterre</i> .
<i>P. gibbus</i> , <i>Schreber</i> .	<i>Catodon trumpo</i> , <i>Gerrard</i> .
	<i>Cetus macrocephalus</i> , <i>Oken</i> .

Its principal food are the sepiadæ or cuttle-fish, but it swallows small fishes.

(m) *Catodon Colneti*, the Mexican sperm whale,

is an inhabitant of the North Pacific, the South Seas, and the equatorial oceans.

(n) *Catodon polycyphus*, South Sea sperm whale. The cachalot or sperm whale inhabits the Southern Ocean.

(o) *Catodon kogia*, *Gray*, taken near the Cape of Good Hope. It has a short head, and is supposed to be the young of *C. polycyphus*.

(p) *Beluga Kingii*, has been taken off the coasts of Australia, where it represents the white whale *B. catodon*, *Catodon macrocephalus*.

(q) *Physeter simus*, *Owen*; *Euphysetes simus*, a new species.

(r) *Globiocephalus Indicus*, *Blyth*, the Indian Ca'ing whale. In 1852 a shoal (schule or school of sailors) was carried by a current into the salt water lake near Calcutta.

Delphinæ, Dolphins.

(a) *Neomeris phocænoides*, *Gray*.

Delphinus melas, *Ternus*.

A dolphin of the Indian Ocean.

(b) *Phocæna communis*.

Phocæna Rondolettii, *Will.* | *Delphinus phocæna*, *Linn.*

Common porpoise, or porpresso.

(c) *Grampus sakamata*, *Schlegel*.

Sakam kuzira, . . . JAPAN.

Found off the coast of Japan.

(d) *Grampus Sieboldii*.

Nairo gata, . . . JAPAN.

A native of the coasts of Japan.

(e) *Grampus macrorhynchus*, black fish of the South Sea whalers; it inhabits the South Seas.

(f) *Delphinapterus Peronii*, right whale porpoise of whalers. It is found on the Brazil bank, off the coasts of New Guinea, and the higher southern latitudes. It lives in large shoals, and its flesh is esteemed a delicacy. It is black; but the beak, the pectoral fins, and under part of the body are white.

(g) *Delphinus*. — Seafaring people call the species of this genus bottle-nose, bottle-head, flounder-head, grampus, porpoise, porpresso, or porpus, sometimes even whale, and give the name of dolphin to the *Coryphæna*, a scomberoid fish which changes colour when dying. There are several species of *Delphinus* :—

(h) *Delphinus Heavisidii*, the hastated dolphin, inhabits the South Sea and Cape of Good Hope.

(i) *Delphinus obscurus*, the dusky dolphin, inhabits the Southern Ocean and Cape of Good Hope.

(j) *Delphinus abusalam* inhabits the Red Sea.

(k) *Delphinus eutropia* inhabits the Pacific Ocean and Chili.

(l) *Delphinus Novæ Zealandiæ*, the New Zealand dolphin, inhabits New Zealand and Cape Gable.

(m) *Delphinus Forsteri*, Forster's dolphin, inhabits the Pacific Ocean between New Caledonia and Norfolk Island.

(n) *Delphinus sao* inhabits Madagascar.

(o) *Delphinus longirostris*, the Cape dolphin, inhabits the seas about the Cape of Good Hope and the Southern Ocean.

(p) *Delphinus perniger*, *Elliot*, *Blyth*, the black dolphin, Bay of Bengal.

(q) *Delphinus plumbeus*, *Dussumier*, the plumbeous dolphin of the Malabar coast.

(r) *Steno attenuatus*, *Gray*.

(s) *Steno Malayanus*.

<i>Delphinus plumbeus</i> , <i>Dussumier, Cuv.</i>	<i>Delphinus Malayanus</i> , <i>Lesson apud Cuv.</i>
<i>Parampuan</i> , LAUT, MALAY.	<i>Dolphin ventre roux</i> of Paris Museum.

Inhabits the Malabar coast and coasts of Penang. It is numerous, and rather heavy in its movements, but is rarely captured, except by chance in the stake-nets. It eats small fishes, *Clupea* and *Glyphisodon coelestinus*, *Cuv.*

(*t*) *Steno frontatus* inhabits the Indian Ocean and the Pacific.

(*u*) *Platanista Gangetica*.

<i>D. rostratus</i> , <i>Shaw.</i>	<i>Delphinus Shawensis</i> , <i>Blainville.</i>
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<i>Platanista</i> , <i>Pliny.</i>	<i>Sou-sou</i> , <i>INDIA.</i>
<i>Dauphinedu Gange</i> , <i>T. Cuv.</i>	<i>Suan</i> , <i>Buffon.</i>

Inhabits the Ganges and Irawadi.

(*v*) *Platanista Indi*, *Blyth*, the porpoise of the Indus, larger and more robust than *P. Gangetica*.

(*w*) *Halicore dugong*.

<i>Trichechus dugong</i> , <i>Gmel.</i>	<i>Dugungus Indicus</i> , <i>Ham.</i>
<i>Indian Dugong</i> , . . <i>Engl.</i>	<i>Le dugong des Indes</i> , <i>Fr.</i>

Inhabits the shallows of the Indian Ocean and about Ceylon, where the water is not more than two or three fathoms deep. It does not appear to frequent the land or the fresh water. Its flesh is delicate. The dugong was noticed as occurring in Ceylon by the early Arab sailors, by Megasthenes (*Fragm. lix.*) and *Alian*, and subsequently by the Portuguese. It is this creature which has given rise to the tales about mermaids which have till the present day occupied the world, and doubtless had their origin in the tales of the Arab sailors. They are phytophagous or plant-eaters.

CETONIIDÆ, or rose chafers, a family of the Coleoptera. These and Buprestidæ, or metallic beetles, are the largest and most brilliant of the Coleoptera.

CETRARIA ISLANDICA. *Ach.* Iceland moss. It is chemically allied to starch; it swells in water, and when boiled becomes gelatinous.

CEYLON is called by the Hindus, Lanka. Sinhala-diva, its local name, was corrupted into Serendiva or Serendip by the Arabian mariners; and it is still known amongst Indian Mahomedans by the last name. The Arabs, however, in addition to Serendip, call it also Sinkhul. To the ancients it was known as Tam-ba-pani, from which came the name Taprobane used by Milton when he wrote of—

'The Asia kings and Parthian among these:
From India and the golden Chersonese,
And utmost Indian isle Taprobane,
Dusk faces with white silken turbans wreathed.'

The chronicles of the island extend in an unbroken series to 543 B.C. From the Honourable George Turnour's epitome of the sovereigns of Ceylon, it is observed that authentic history commenced with Vijaya, B.C. 543; and the last king of Kandy was Sri Vikrama Raja Singha, who was, in 1798, deposed by the British, and died in captivity at Vellore on the 30th January 1832. Mr. Turnour gives the following fixed points in the chronological history of Ceylon events:—

- B.C. 543. The landing of Vijaya, in the year of Buddha's death.
 " 307. The mission from Dharm Asoka to establish Buddhism in Ceylon.
 " 104. Conquest of Ceylon by the Malabars.
 " 90. Founding of Abhayagiri by Wala Gaurabahu.

- A.D. 209. Date of the Vaituliya heresy, in Vaivahara's reign.
 " 252. Revival of ditto in the reign of Golu Abhaa.
 " 301. Death of Maha Sen.
 " 545. Another revival of the Vaituliya heresy, in Ambakira's reign.
 " 838. Origin of the Vijra Waadiya heresy, in Mitwella Sen's reign.
 " 1153. Accession of Prakrama Bahu.
 " 1200. Accession of Sahasa Mullaawa.
 " 1266. Accession of Pandita Prakrama, Bahu III.
 " 1347. Accession of Bhuwanika, Bahu IV.

The first authentic account of Ceylon or Taprobane is given by Onesiculus, the Macedonian admiral, who lived B.C. 329 or 330. Diodorus Siculus, B.C. 44, gives an account of it; Strabo also mentions it; and Dionysius, who flourished A.D. 36, confirms former accounts, and alludes to its elephants. Sinbad also speaks of it in a volume, perhaps a compilation and in part a romance, as does Abdoor Razak; and still more recently Ribeiro also gives a notice of it.

In the reign of Claudius Caesar, a Roman publican, who farmed the custom duties of the Red Sea, was driven from Arabia by storms on to Ceylon, where he found a flourishing kingdom and an enlightened sovereign, whom he persuaded to send an embassy of four envoys to Rome, by way of the Red Sea, for the purpose of negotiating a commercial treaty. Ceylon is famed in the literature of India as the scene of Rama's exploits, and as a place to which Asoka sent a mission. In A.D. 1153, a Singhalese monarch fitted out a fleet of five hundred ships to resent an insult offered to his ambassador. Ceylon seems to have been subjected to frequent inroads from Southern India, immediately before and after Christ. Ceylon was occupied by the Portuguese in 1596, was taken possession of by the Dutch in 1658. In 1782 the British took possession of Trincomalee, but Admiral Suffrein recaptured it. In August 1795 the British again took Trincomalee, and in February 1796 they took Colombo, but in 1803 and 1804 they met with reverses. In 1814-15 General Brownrigg invaded Kandy, and on the 2d March 1815 the British assumed the sovereignty of the lowlands. But a serious outbreak occurred in 1817, which occupied the troops for a year, and in 1818 the king of Kandy was taken prisoner to Vellore, where he died in 1832.

The island lies between lat. 5° 55' and 9° 51' N., and long. 79° 41' 40" and 81° 54' 50" E. Its extreme length from north to south, from Point Palmyra to Dondra Head, is 271½ miles; its greatest width 157½ miles, from Colombo on the west coast to Sangeman Kande on the east; and its area, including its dependent islands, 25,742 square miles, or about 1-6th smaller than Ireland. Its circumference is about 900 miles, giving a superficial area of nearly 24,000 square miles.

The mountain system in the south has an area of 4212 miles, and the following are the most remarkable heights:—

Pidurutalla galla (8305),	Adam's Peak (7120), 7420 ft.
8280 ft.	Nammune kulle, 6740 ..
Kirrigal potta, . 7810 ..	Plain of Neueraellia,
Tutapella, . . . 7720 ..	6210 ..

Like the Peninsula of India, it has a belt of low land of varying breadth, consisting of tertiary strata, running round its coast. Numerous lagoons exist on the east coast, at Nilla veeli, Baticulom, etc. Adam's Bridge, between Ceylon and Rannad,

consists of several ledges of conglomerate and sandstone, hard at the surface, and growing coarse and soft as it descends, till it rests on a bank of sand, apparently accumulated by the influence of the currents at the change of the monsoons. The Mahavelli Ganga river has its source near Adam's Peak, and, after a course of 200 miles, enters the Bay of Bengal at Trincomalee. The Kalani Ganga and Kalu Ganga are on the western coast, and the Walaway Ganga on the south-east. A rich and well-watered plain runs between Colombo and Galle, covered with cocoanut, bread-fruit, and jack-fruit trees.

The census of 1871 showed the total population to be 2,406,000, in the proportion of 1,286,000 males and 1,120,000 females. Pure Singhalese, 1,670,000; Tamils, about 542,000; Moormen (of Arab descent), 160,000; these three classes making up 2,372,000, leaving only 34,000 for all other races. Malays (Mahomedans by religion as well as the Moormen) make up 6800; all other pure Asiatic or African races—including Afghan, Armenian, Bengali, Burmese, Kafir, Chinese, Mahratta, Parsee, Rajput, Sikh—comprise a few thousands more; and European descendants of the Dutch, Portuguese, English, etc., make up not more than 10,000; while pure Europeans, including English, Scotch, Irish, and a few Germans, French, etc., number, exclusive of the military, about 4500.

The numbers of the religious denominations of the inhabitants of Ceylon may be thus stated:—Buddhist, 1,520,575; Saivite, 564,414; Roman Catholic, 182,613; Mahomedan, 171,542; Episcopal Protestant, 24,756; Wesleyan, 6071; Presbyterian, 3101; Baptist, 1478. Of the entire population, one in 723 is insane, one in 160 is deaf and dumb, and one in 357 is blind.

The Tamils of Ceylon belong to the same race as the Tamils of Southern India, and have been on the island for centuries, chiefly in the N.E. portion of the island; and the two towns to which they chiefly resort are Jaffna and Trincomalee. Their main occupation is agricultural. Tamil coolie labourers come over in large numbers from the continent during the coffee season.

The *Singhalese* proper range themselves under the heads of Kandians, low-country Singhalese, and Rhodia. The Kandians inhabit the hill country, and are a hardy, robust race, never till recently intermingling with their low-country brethren. Their language is made up of three component parts,—Elu (or Singhalese pure), the Pali, and the Sanskrit. They possess an extensive literature, and their religion is Buddhism. The low-country Singhalese are Buddhists, Roman Catholics, or Protestants. Among the Kandians, and them only, a form of polyandry is prevalent, and the wife has the possession of all brothers. The children call the eldest brother father. A man can bring in another, not a relation, to have joint marital rights with himself; indeed, the first husband can so introduce as many as the wife will consent to receive as husbands. In Kandy, in the Beena marriage, the husband goes to reside in the wife's house, and the woman shares the family inheritance with her brothers. The husband, in this marriage, can be dismissed summarily by the family of the wife. In the Deega, a more respectable form of marriage, the wife leaves her own house for that of her husband, forfeits all claim

on the property of her parents, but acquires some claim on that of her husband, and the wife cannot obtain divorce, unless with the full consent of the husband. Divorces are constantly sought for by women on trivial pretences. A child born within nine months of the divorce, must be maintained by the husband. Sirr (Ceylon) says the principal castes are four, viz. the Surya Vansa or Royal race, which has two divisions, viz. Goe Wansa, cultivators, the most numerous in the island, and to it belong the nobles, chiefs, priests, and nearly all the government servants, and (2) the Nille Makareya, or shepherds, form the second division of the Surya.

Brachmana Wansa, descendants of Brahmans.

Wiepa Wansa, cultivators and shepherds.

Shoodra Wansa has 60 subdivisions.

The *Rhodia* race is regarded as unclean; very numerous; forbidden to approach a temple, or any of the higher castes.

The *Gataroo* is an outcaste race.

Burgher is the name applied to those of mixed European and native origin. One race in Ceylon wear their hair, which is long and luxuriant, dressed like a woman's, with one or two very large tortoiseshell combs fastened in it, which, to a European eye, imparts a peculiarly unmanly look to the wearer. The dress of women differs little from that of men, but they mostly wear a kind of bodice with long sleeves. An aversion to carrying the lightest burden prevails in Ceylon, and the poorest tradesman or servant generally employs a coolie to carry a bundle which a European gentleman would take in his hand.

The vegetable productions of Ceylon are coffee, cinnamon, coir, sugar, rice, tobacco, cotton, cocoa, areca nuts, cocoanuts, cardamoms, pepper, rice, arrowroot, maize, manioc, arrack, cocoanut oil, essential oils of cinnamon, citronella, and lemon grass, dye-wood, ebony and other furniture woods. The sugar-cane was brought to Ceylon from the Mauritius by a merchant of Colombo about 1832. European settlers have largely engaged in coffee planting. This latterly became less remunerative, and tea, cacao, cinchona, and the Liberian coffee were introduced. At the end of 1880, about 5400 acres were under cacao. In 1880 the export of cinchona bark was 1,161,989 lbs., valued at Rs. 12,00,000. The mineral and animal products are precious stones, pearls, ivory, and chank shells. Precious stones are found in the flat country around Ballanggodde, S.E. of Ratnapura, on the western plains between Adam's Peak and the sea; at Nuernellia, in Oorah, at Kandy, at Matelle in the Central Provinces, and at Ruanelle near Colombo, at Matura, and in the beds of the rivers eastward towards the ancient Mahagam; but the chief gem district is in the plains at the foot of the stupendous hills of Saffragam. The ruby, amethyst, topaz, sapphire, and cinnamon stone, are found in great abundance, but not emeralds. Spinell, chrysoberyl and corundum are also found. Sapphires, red, purple, yellow, blue, white, and star-stone, are met with at Matura and Saffragam, and rubies and sapphires in the neighbourhood of Avisavelli, and on the Neuraellipatam. The corundum of Battaganana is frequently found in large six-sided prisms, and is commonly of a brown colour, from which it is called by the natives Curundu galle, cinnamon stone; occasionally it is to be met with

partially or entirely covered with a black crust, which is merely the stone with an unusual proportion of iron. In the beds of the rivers south and east of the mountain chain in Ceylon, the sands are so rich in comminuted fragments of mica, quartz, sapphire, ruby, and jacinth, as in some places to be used by lapidaries in polishing the softer stones, and sawing elephants' grinders into plates. Dr. Gyax considered the original matrix of these rubies to be a stratum of decomposed grey granite at Ylima Pohura on the south-eastern decline of the Pettigalle Kanda. Corundum is very plentiful at Battagamana, on the banks of the river Agiri Kandura. The great bulk of the gems, however, come from Ratnapura, which means the city of gems. Ceylon affords all the varieties of quartz, as rock-crystal, amethyst, rose-quartz, cat's eye, and prase. Rock-crystal occurs in abundance, both massive and crystallized, of various colours, good quality, and in large masses. Amethyst also is pretty abundant; very beautiful specimens are found in the alluvion, derived from the decomposition of gneiss and granite rock, in Saffragam and the Seven Korles. Adularia is very abundant in some parts of the island, particularly in the neighbourhood of Kandy, where it is occasionally the predominating ingredient of the rock. Ceylon produces the finest cat's eyes in the world,—indeed, the only kind that is highly esteemed, and that bring a high price. The best specimens have been found in the granitic alluvion of Saffragam and Matura. Prase is of rare occurrence amongst the pebbles on the shore of Trincomalee. Belonging to the schorl family are topaz and schorl. The topaz commonly passes under the name of the 'white or water sapphire.' It is generally white, or bluish or yellowish white; it is commonly much waterworn, perfect crystals of it being very rare. It occurs in many places in the alluvion of granitic rock.

The zircon family is richer in Ceylon than in any other part of the world. It is found in the districts of Matura and Saffragam, and is most abundant in the former. Matura diamond is the name applied to its finest varieties by the dealers in gems. Besides the two well-established species, common zircon and hyacinth, there is a third, massive, opaque, and uncrystallized, and of a dark brown colour. Specimens of it from Saffragam weigh two or three ounces. The yellow varieties of zircon are sold by the natives as a peculiar kind of topaz,—the green as tourmalines, the hyacinth red as inferior rubies, and the very light grey as imperfect diamonds. All the varieties are found in the beds of rivers, or in alluvial ground, which, both in Saffragam and Matura, is of the same kind.

For the ruby, Ceylon has been long celebrated. Four species of it, viz. spinell, sapphire, corundum, and chrysoberyl occur. In gneiss or granitic rock, spinell is comparatively rare.

Ceylon has many animals—elephants, buffaloes, elk, spotted deer, the red or paddy field deer, mouse deer, the hog, bear, leopards, hares, black partridge, red-legged partridge, pea-fowl, jungle-fowl, quail, snipe, ducks, widgeon, teal, golden and other kinds of plover, a great variety of pigeons, innumerable snakes, and the crocodile; but it is free of the tiger, wolf, hyæna, and cheeta. Elephants are now only found in the thickly wooded forests. In one mode of snaring them,

called 'atna-ldo,' or hand snaring, ropes of hide, with a noose, are slipped by the hunters over the hind foot of the animal, and immediately fastened to a tree; the animal, moving on, stumbles and falls, on which other hunters immediately twist other ropes about the legs in a figure of 8, and a shed is erected for its protection until sufficiently tamed to be removed. The solitary, must, or rogue elephant is called horaalua in Ceylon. The height of a full-grown Ceylon elephant varies from 8½ to 10 feet. The tusks vary in length from 3 to 7 feet, and their weights range from 30 to 120 lbs.; but 60 or 70 lbs. are the average. Upwards of 320 species of birds have been indicated by Dr. Templeton, Dr. Kelaart, and Mr. Layard. Of the fish, the Cybium guttatum, one of the scomberoid fishes, known to Europeans as the scir fish, is the best; but mackerel, carp, mullet, red and striped perches and a sardine (*Sardinella Neohowii*) are used.—*Prod. F. Zeyl.*; *Tennent's Ceylon*; *Forbes' Ceylon*; *Baker's Rifle*; *Cunningham, Anc. Geog. of India*; *Yule, Cathay*, i. p. clxxvi.; *Madras Mail*, Jan. 31, 1873; *Times*, Dec. 27, 1873; *Davy's Travels in Ceylon*. See Architecture.

CEYLON MOSS, edible seaweed.

Gracillaria lichenoides, *Grœv.*

Fucus lichenoides, *Turner.*

F. amyloaceus, *O'Shaughnessy.*

Shih-wha-tsai, . . . CHIN. | Mousse de Ceylon, . . . FR.

A small and delicate fucus, well known for the amyloaceous property it possesses, and the large proportion of true starch it furnishes. The fronds are filiform; the filaments much branched, and of a light purple colour. It grows abundantly in Ceylon, in the large backwater which extends between Putlam and Calpentyn. It is collected by the natives principally during the south-west monsoon, when it becomes separated by the agitation of the water. The moss is spread on mats, and dried in the sun for two or three days. It is then washed several times in fresh water, and again exposed to the sun, which bleaches it; after which it is collected in heaps for exportation. 100 grains weight yielded the following proportions:—

Vegetable jelly, . . .	54.50	Gum,	4.00
True starch, . . .	15.00	Sulphate and phos-	
Ligneous fibre, . .	18.00	phate of lime, . .	1.00
Sulphate and muri-			
ate of soda, . . .	6.50	Total,	99.00

with a trace of wax and iron. For a decoction, take two drachms ground to fine powder, water one quart; boil for twenty minutes, and strain through muslin. By increasing the proportion of the ground moss to half an ounce, the filtered solution on cooling becomes a firm jelly, which, when flavoured by cinnamon or lemon-peel, sugar, and a little wine, is an excellent article of light food for sick children and convalescents.—*Beng. Phar.* p. 276.

Placaria candida and *Sphæro coccus lichenoides*, *Grœv.*, also furnish Ceylon moss.

CH. The soft sound of the English ch, as in charm, cheese, chintz, is usually attained in French by tch and in German by tsch. Many of the inhabitants of the south and west of India cannot pronounce the ch, and invariably substitute the s. Thus the noted Pindari leader Cheetoo was called in the Dekhani, Setoo. Again, with many of the tribes of the Indian desert, the s is like a stumbling-block, which causes many singular mistakes, when Jeyaulmir, the 'hill of Jeyaul,' becomes Jehulmir.—*Tod's Rajasthan*, i. p. 102.

CHA. HIND., PORT. Tea; also, in Chinese, the camellia.

CHA. TIN. The common fowl, generally small in Tibet. In Sikkim, fowls are remarkably large.

CHA. TIB. *Bos frontalis*.

CHA-AB, Chab, Kanb, or, following the Persian pronunciation, Tsiaab, an Arab tribe who occupy the lower part of Mesopotamia. They are a tall, martial race, strong-limbed and muscular, active and healthy. At Baron de Bode's visit they extended on the north as far as the territories of Shushter and Ram Hormuz, eastwards to Behbahan; and, including Hindiyān in their possessions, they spread south along the head of the Persian Gulf; on the west they do not extend beyond Haniza. They became known to the British in the latter part of the eighteenth century, in consequence of their piratical exploits on the Persian Gulf, and their having captured some British vessels sailing in those latitudes. — *De Bode*, ii. pp. 110-122.

CHABAI. MALAY. Species of capsicum; Chabai Java, *Chavica Roxburghii*, long pepper; Chabai of Lombok, *Capsicum frutescens*; Chabai sabrang, a species of capsicum.

CHABANAH. HIND. The name given to all parched cereals and pulses,—from Chabna, HIND., to chew,—because eaten alone.

CHABAQ. HIND. *Salicornia bracteata*? also root of the black pepper vine.

CHABERIS of Ptolemy, the river Cauvery.

CHABUK. HIND. A whip; hence Chabuk-sowar, a jockey, literally a whip-rider.

CHABUK CHURI. HIND. Hiptage madablota.

CHABUTRA. HIND. A raised platform, a dais or terrace; a flat masonry platform or edging to a well, etc., for sitting on.

CHACH is the name of the great plain to the east of the Indus, immediately opposite to Ohind, which may have been named after the Brahman dynasty of Ohind, as the Banar plain was named after raja Banar. The Brahman dynasty of Sind was also established by a Chach in A.D. 641; and this date corresponds with the period of the expulsion of the Brahman dynasty from Chichito, or Jajhoti, by the Chandels of Khajura. Several places on the Indus are named after the Chach dynasty,—Chachpur, Chachar, Chachgaon, Chachi. Chach was a Brahman who usurped the kingdom of the Rai dynasty of Sind. He was a contemporary of the Shahram or Shahrear, and he is supposed to have invented the game of chess. He seems to have reigned about A.H. 2, and to have been succeeded by his brother. The Rai dynasty had ruled from Kashmir and Kanouj to Makran and the port of Dabal on the shores of the sea of Oman, and from Surat to Kandahar and the Suliman range. The commencement of this dynasty has not been ascertained, but in the time of Rai Diwaij the capital was Alor. He was a powerful chief, who contracted alliances with the rulers of India. He was succeeded by his son, Rai Siharas I. Rai Sihasi was the celebrated son of Rai Siharas, and the next was Siharas II., who reigned 42 years, and was killed in battle. After Sahasi II., a Brahman dynasty succeeded. Their reign seems to have extended to 137 years, and to A.D. 479.—*Elliot; Cunningham's Ancient Geog. of India*, p. 55.

CHACHIFON or Chachiyon. HIND. *Rhododendron arboreum*.

CHACH-NAMAH, also called the Tarikh-i-

Hind-o-Sind, is a Persian translation from an old Arabic history, made about A.D. 1216 (A.H. 613) by Mahomed, then residing at Uch in Sind. The ancient Arabic seems to have been written before A.D. 753. It is largely drawn upon by Nizam-uddin, Ferishta, Mir Masum, and others. The Chachnamah Persian work is descriptive of the Arab conquest of Sind. The Arab occupation of Sind was only temporary. On their retreat, the territory reverted to the rule of native princes, and was practically independent until its absorption into the Moghul empire during the reign of Akbar, in A.D. 1592, for the successes of Mahmud of Ghazni made no permanent impression on them. — *Elliot's Hist. of India*, p. 9.

CHACHRI. HIND. *Myrsine Africana*.

CHACHUNDI or Chichundi. HIND. The shrew or musk rat, species of *Sorex*. *S. cærulescens*, *S. Indicus*, and many others.

CHACKLER. ANGLO-TAM. A tanner, a shoe-maker; properly, Chakkili.

CHACRA. HIND. A wheel, a circle, a cycle of years; a weapon of a circular form often placed in the hands of the Hindu gods. Rasi chacra, the zodiac. Varahaspati chacra, the cycle of 60 years. Nachatra chacra, the sphere of the fixed stars. Prachacra, an epicycle on which the degrees of precessional variation are counted. Chacradhari, or wielder of the discus, the most ancient weapon of the Indo-Getic race. A name of Krishna.—*Warren, Kala Sanhita*.

CHADACHEY. TAM.? A small tree of Palghat; wood of a light-brown colour, used for buildings and carts.—*Colonel Frith*.

CHADACULA. TAM., TEL. Dammer, resin; *Vateria Indica*.

CHADAR. HIND. A sheet, a dam, a sheet of sheet iron, a scarf. Phulki chadar, a flower sheet spread on graves.

CHADARGHAT, the site of the Residency of Hyderabad, on the left bank of the Musa river, which is there dammed. It has been irregularly built over, but contains many Christian families, and many wealthy Hindu and Mahomedan residents, bankers, and merchants.

CHADUR KUL, a lake 110 miles N.W. by N. of Kashgar, 11,300 feet above the sea. It was visited by Captain Trotter in 1873.

CHÆROPHYLLUM SATIVUM. *Lam.*

Anthriscus cerefolium, Hoffmann.

The chervil, a good culinary herb.—*Von Mueller.*

CHÆTODON. This genus belongs to the Squamipennes, which includes the Chætodons and other curious fishes, as the coachmen, the horsemen, and others.

Chætodon araneus, the Gal handak, a singular and much-admired fish, about 3 inches long; has a delicate and white flesh, greatly esteemed.

Chætodon prætextatus, *Cantor*. Like other species of this and the neighbouring genera, the present expires immediately when removed from its element. It appears to be allied to *C. reticulatus* and *C. lunula*, *Cuv. and Val.*

Chætodon rostrata, the beaked and rostrated Chætodon of the fresh-water rivers of India, when it sees a fly alighting on any of the plants which overhang the shallow water, approaches the place cautiously, till directly beneath the object of its attack. Then, placing itself in an oblique direction, with its mouth and eyes beneath the surface, it remains a moment

immoveable, and, taking aim like a first-rate rifleman, darts at the insect a drop of water from its tubular snout, but without showing its mouth above the surface, from which only the drop seems to rise, and that with such effect, that though at the distance of four, five, or six feet, it very seldom fails to bring its prey into the water. Another small East Indian fish, the *Toxotes jaculator*, catches its food by a similar dexterous display of archery. Mr. Hommel, governor of the hospital at Batavia, first noticed the habits of the *Chaetodon rostrata*.—*Wood's Zoography*; *Cantor*.

CHAGA, also Chaga-laga. TEL. Sansevieria *Zeylanica*, *Roscoe*.

CHAGDA or Chackradah is an abyss said, in Hindu fable, to have been made by the chariot-wheel of Bhagirath. The legend points to an antiquity which is not borne out by any old vestiges or ancient population. The place is at best a mart, or outlet, for the agricultural produce of the neighbouring districts, being crowded with warehouses.—*T's. of a Hindoo*.

CHAGHTAI, a Turki race to which Baber belonged. He spoke and wrote in Chaghtai Turki, which continued in use at the court of Delhi until a late period. There were two races, two languages, and two religious sects at that court,—the nobles of Iran and Turan, Persia, and Turkistan, the former of the Shiah persuasion, who spoke Persian, the latter Sunni Mahomedans, who spoke Turki; and in the latter days of the empire the contentions between the two races were a source of its weakness. Tod says (*Rajasthan*, i. pp. 6, 60, 322) Chaghtai are the Sakatai of the Hindu Puranas, from Sakadwipa, changed by the Greeks to Scythia. The political limits of the great Getic nation in the time of Cyrus, six centuries before Christ, were little circumscribed on the rise of Timur. At this period (A.D. 1330) the kingdom of Chaghtai was bounded on the west by the Dhashti-Kapchak, and on the south by the Jaxartes or Jihon, on which river the Getic khan, like Tomyris, had his capital. Kojend, Tashkand, Otrar, Cyropolis, and the most northern of the Alexandria cities were within the bounds of Chaghtai. D'Ohason names thirty Chaghtarides on the throne of Transoxiana from 1222 to 1362. As the Chaghtai dynasty drew to its close in Eastern Turkistan, the priestly element began to increase. In 1678, Galdan Khan, sovereign of the Eleuth or Kalinuk tribes of Dzungaria, established the khojahs of the White Mountain. But, after a century of dissensions, in 1757 the Chinese brought the Turkistan states under their rule. Were we to contrast the literary acquisitions of the Chaghtai princes with those of their contemporaries of Europe, the balance of lore would be found on the side of the Asiatics, even though Elizabeth and Henry IV. of France were in the scale. Amongst the princes from the Jaxartes are historians, poets, astronomers, founders of systems of government and religion, warriors, and great captains, who claim our respect and admiration.—*Tod's Rajasthan*, i. pp. 6, 60, 322; *Ferrier's Afghans*, p. 423; *Vambery*, pp. 157-159.

CHAGOS ARCHIPELAGO, a group of islands belonging to Great Britain, and a dependency of the Mauritius, about 250 miles S. by W. from the southernmost of the Maldivé islands. They are rented in kind to persons of French extraction; the population, 554 in number, chiefly Negro.

Pigs are abundant, and poultry plentiful. They were surveyed in 1786 by Lieutenant Archibald Blair, and in 1837 by Captain Moresby. Diego Garcia, called Great Chagos island, extends from lat. 7° 13' to 7° 26' S., and its centre is in long. 72° 24' E. The Great Chagos bank occupies the centre of the Archipelago. The other islands are the Six Islands or Egmont islands, Danger island, Eagle island, the Three Brothers, Nelson island, Peros Banhos, and Solomon islands. The Chagos, Laccadive, and Maldivé Archipelago are groups of atolls and madreporic reefs, low coral islands, densely clothed with coconut trees. The Maldives have upwards of 1000 islands and reefs. The Laccadives are seventeen in number. The Chagos group has some ordinary atolls, some annular reefs rising to the surface, but without any islands on them, and some atoll-formed banks either quite or nearly submerged. The Chagos bank is a half-drowned atoll.—*Darwin*.

CHAGUL. HIND. A leather vessel for carrying water on a journey.

CHAGUL-BANTI. BENG. *Dæmia extensa*, *Brown*. Chagul khuri, *Ipomæa pes-capræ*, *Swiet*. Chagul nudi, *Sphæranthus hirtus*, *Burm*. Chagul patee, *Cynanchum pauciflorum*, *R. Brown*.

CHAH. PERS. A well. Hence chahi, belonging to a well, or lands irrigated from wells. Many places have this as a distinctive appellation.

CHAHAL. PERS. Forty. Hence Chahlum, the forty days of uncleanness after childbirth.

Chahal Dakhtar, a halting-place in the valley of the Murghab, 60 miles N. of Herat on the left bank of the Khushk river; has a shrine to the memory of 40 virgins who were carried off by Turkomans.

Chahal Minar. See Kermanshah.

Chahal Situn, a palace at Ashraf in Persian Mazandaran, built by Shah Abbas. It has a beautiful enclosed garden. Here Shah Abbas in 1627 received Sir Dodmore Colt, the English ambasador.

Chahal Situn, a palace at Isfahan, in the middle of an immense square (Morier).

Chahal Situn, Lithinos pyrgos, the stone tower in Mount Meru.

Chahal-Wasti, or captain of forty, amongst the Nasiri, a nomade race who occupy the Tohti and Hotuki countries in summer, and the Daman or skirts of the Suliman range in winter. In their migrations, they appoint a chahal-wasti, or captain of forty, and a director-general. See *Afghan*; *Nasiri*.

Chahal Tan is a cave on the Kābul road, between Chardeh and the city of Kābul, accessible only by a narrow aperture. It is believed that if a person enter it he will be unable to squeeze himself out, unless pure and free from sin. It is therefore not much visited (*MacGregor*, pp. 212-13). *Masson* says (ii. p. 85) there are many places of pilgrimage (ziarat) called Chahal tan, and that Kābul has one near Argandi.

Chahal Tan is the loftest mountain in Baluchistan, its highest peak being 12,000 feet. It forms the western boundary of the valley of Quetta or Shawl.—*Pottinger*; *Postans*; *Masson*; *Cook*; *MacGregor*, p. 110, iv. p. 3.

CHAH-BACHA. HIND. A small masonry tank, used by soap-boilers.

CHAHIL or Chahira, a Rajput tribe in Hissar, of which the greater part is now converted to

Mahomedanism. There are a few in the Hissar district and on the borders of Bikanir. Though Mahomedans, they nevertheless retain charge of the tomb of Goga Chauhan, a Hindu prince now esteemed a saint.—*Elliot; Wilson.*

CHAHONG? A tree of Akyab; grows to a moderate size, and is plentiful in Ramree and Sandoway districts. Used in house-building. (Qu. Is this *Cordia myxa*?)—*Cal. Cat.* 1862.

CHAHUMAN, the Chauhan Rajput tribe.

CHAI. ARAB. Tea.

CHAI. MALEAL. *Oldenlandia umbellata.*

CHAIBAR. Many of the Arabian tribes had been converted by the Jews who fled from the destruction of Jerusalem by Titus. Chaibar was their principal city in Arabia; it was taken by Mahomed A.D. 623-7. Chaibar was in the neighbourhood of Medina; they were removed into Syria by Omar. Hira also was the residence of a Christian prince, who had reigned there 600 years before he was conquered by the Mahomedans.

CHAILE. HIND.? A tree of Chutia Nagpur, furnishing a hard, white, grey timber.—*Cal. Cat.*

CHAIN, low caste races in N. India.

CHAINA. HIND. *Panicum pilosum.*

CHAINIAR of Hazara, *Nussiaerya hypoleuca.*

CHAISHUSHA, one of the Menu. See Menu.

CHAIT, a Hindu month (March—April), commences when the sun enters into Pisces.

CHAIT of Sikkim (borrowed from Tibet) is a square pedestal, surmounted with a hemisphere, the convex end down, and terminated with a cone, crescent, and disc. These are erected as tombs to lamas, and in memory of illustrious people, and are venerated accordingly, the people always passing them from right to left, often repeating the invocation, 'Om mani Padmi hom.'—*Journal of the Asiatic Society of Bengal*, No. 29, p. 427.

CHAITANYA, a Hindu religious reformer. He was born A.D. 1485. His father was a Brahman, who had come from Srihatta, Sylhet, or Tibet, and settled at Nadiya, where Chaitanya was born. In his early youth he married the daughter of a celebrated saint; but in 1509, when twenty-four years of age, he seems to have abandoned the world and domestic life, and, after long journeying, repaired to Cuttack in Orissa, where for twelve years he laboured to extend the worship of Jagannath at Puri, and devoted the rest of his life to the propagation of his views, aided by Adwaitanand and Nityanand, two men of domestic habits. The age in which he was born had been preceded by one of great religious reforms and innovations. There had been Ramananda, who had revived the anti-caste movement; and Kabir, who set aside alike the Hindu Shasters and the Koran, and preached a universal religion. In Bengal, Buddhism had maintained its supremacy up to the 10th century. On the accession of the Sena princes, Saivism gained the ascendancy, and predominated in the land. Under coalition with Saktaism, the worship of the emblems of the energy of man and the fruitfulness of woman, it had degenerated to the very licentious creed of the Tantro-Shastras, which culminated in the worst forms of libertinism about the time of Chaitanya. Two thousand years before, a greater reformer had viewed with disgust and a relenting heart the bloody rites and sacrifices of the Vedic Yagya, and to reform the abuses Buddha had promulgated the doctrine of non-crucely to animals. In like manner, the

bacchanalian orgies of the Tantrika, and their worship of a nudely exposed female, had provoked the abhorrence of Chaitanya, and roused his energy to remove the deep blots upon the national character. He commenced his labours by holding meetings of his immediate friends at the house of Sri Blasa. His labours lasted through six years, when he entrusted his disciple Nityananda to propagate his views; and it is to Nityananda that the origin of the Gosai is owing. Chaitanya was brought up in the faith of a Vaishnava, but his opinion took a great tinge from the doctrines of his two immediate predecessors. From his early childhood Chaitanya gave signs of an eccentric disposition, but he possessed a very superior intellect, and the purest morals. He had also a very affectionate heart, and simple, winning manners. From 1509, when Chaitanya, styled Nemi, formally renounced the world by embracing the life of an ascetic, he wandered from place to place, travelled to Gour, proceeded to Benares, visited Vrindaban and Puri, teaching his sentimental theology, making numerous converts, and devoting all his energy, time, and life to the fulfilment of his mission. His peregrinations lasted for six years, at the end of which he returned to Nilachal near Jagannath, and, settling there, passed twelve years in an uninterrupted worship of that divinity. He became afflicted with epileptic seizures, which received the name of Pran Pranlap. While still in the prime of life, however, he was afflicted with hallucinations and beatific visions, and in that state of mental derangement he disappeared in A.D. 1527, supposed to have drowned himself at Nilachal or Cuttack, where he had resided, adding energy and repute to the worship of Jagannath.

It was a main part of Chaitanya's doctrine to abolish all caste distinctions amongst his followers, and that they should bestow implicit faith with incessant devotion, which he termed Bhakti. All persons of all castes and occupations are admitted to the sect, from the conviction that all are alike capable of feeling the sentiments of faith and devotion. His doctrine was essentially the worship of Krishna as an incarnation or avatar of Vishnu; and his sect worship Krishna as Parimatma, or Supreme Spirit, prior to all worlds, and alike the cause and substance of creation. In his capacity of creator, preserver, and destroyer, he is Brahma, Vishnu, and Siva; and in the endless divisions of his substance or energy, he is all that ever was or will be. Besides these manifestations of himself, he has, for various purposes, assumed specific shapes as incarnations or avatars,—as anasa or portions, as ansana or portions of portions, and so on ad infinitum. His principal appearance, and in fact his actual sensible manifestation, was as Krishna, and in this capacity the sect believe he again was present as Chaitanya, who is worshipped as the deity, as are the other forms of the same god, particularly as Gopal the cowherd, or Gopi Nath, the lord of the milkmaids of Vrindaban (Bindraban), as his Lila or spirit. His disciples form the largest sect in British India, numbering nine or ten millions, and to be found in every village of Bengal. The date of his birth has also been given as A.D. 1479, also 1485 and 1486, and those of his death 1527 and 1534, at Nilachal or Cuttack.

All castes are admitted into Chaitanya's fraternity, and, once admitted, are associated with

on equal terms by all the brethren. His predecessors, Ramanand and Kabir, had taken low caste men for their disciples. But he scrupled not to permit even Mahomedans to enter his fold; and two of his most eminent followers, Rupa and Sonatun, were originally Mahomedans, ministers in the court of Gour.

The Gosai marry; most of the Banua of Bengal follow their tenets, but their doctrines are held in little esteem. They are regarded as gurus or teachers, and no scandal has arisen from them. The Gosai observe none of the Hindu festivals except those of Krishna; but the anniversaries of the deaths of their founders are observed as such. They do not, says Mr. Ward, reject the mythology, or the ceremonies of the Hindus, but they believe that those of Hari (Krishna) only are necessary. On the nights of their festivals, the initiating invocation, or some sectarian exclamations, may be heard resounding through the streets of Calcutta: Hari, Krishna; Hari, Krishna; Krishna, Krishna; Hari Hari; Hari, Ram; Hari, Ram; Ram, Ram, Hari, Hari.—*Calcutta Rev.*; *Cole, Myth. Hind.* 240.

CHAITANYA-CHANDRODAYA, the Rise of the Moon of Chaitanya, a drama in ten acts, by Kani-karna-pura.—*Dunson*.

CHAITI, spring or Rabi harvest. The guddi padva ceremony, or flying of paper kites, is held on the new year, on the new moon of Chaitra, about the 5th April.

CHAITRYA, written variously Kshatriya, Chetri. Amongst the Aryan Hindus the Chaitrya was a warrior branch taking social rank after the Hindu Brahmans. Menu, writing of their duties, says: 'To defend the people, to give alms, to sacrifice, to read the Vedas, to shun the allurements of sexual gratification, are in a few words the duties of a Chaitrya.' How this soldier branch broke up is extremely obscure; but it is generally supposed that none of the races now in India can trace their lineage to that tribe of Aryans, though some of the Rajput families doubtless belong to them. Their quarrels amongst themselves seem to have led to their own destruction. There seem to have been two branches of the Chaitrya tribe, the Solar, who traced up to Ikshwaku, and the Lunnar, who traced up to Budha, who married Ila or Ella, daughter of Ikshwaku. These martial Chaitrya do not appear to have adopted Brahmanism readily; and the Brahmans, to overcome them, consecrated by fire on Mount Abu a warrior body, who still remain, and are known as the four Agnicula Rajput tribes. A common spelling of the word is Kshatriya.—*Warren's Kala Sanhita*; *Tod's Rajasthan*, i. p. 37. See Hindu; Suryavansa.

CHAITYA. SANSK. From Chit, a funeral pile, a heap. Any sacred object worshipped by the Buddhists, as a tree, an altar, a temple, as well as any monument raised on the site of a funeral pile, as a mound or pillar; and is probably applicable both to the Buddhist chodten, or offering to the deity, and the dungten, a bone or relic receptacle, but is used by the Jains and Buddhists to indicate a temple containing a chaitya. In Nepal and Tibet, and in Buddhist Sanskrit literature, the word is applied to the model of a stupa placed in the temples, and to which the term dhagoba has been applied. These chaityas or dhagobas are an essential feature of chapels or temples constructed solely for purposes of worship, and to which the term chaitya caves has been proposed

to be applied. The later forms have a pradakshana, or passage for circumambulation. The stupa or chaitya of Indian Buddhism are supposed to have been erected subsequent to the cave temples and viharas or monasteries. The chaitya of the Buddhists is the ch'hatra of the Brahmans. One chaitya at Sanchi is structural, but all the others known, in number 20 or 30, are cut in the rock. Seemingly the aisle which surrounded the apse could be lighted from the exterior. The ancient stupa were originally meant as receptacles of either the Buddhas, or the Bodhisattwas and the kings who encouraged the propagation of the Buddhist faith. The chodten or chorten of Tibet are similar to the stupa. They consist of a cylindrical vase, and have a cupola over them. They serve as relic repositories, remains of revered lamas, sacred writings. But they are principally offering receptacles, and no Tibetan passes by without depositing some offering or oblation.—*Hardy's Eastern Monachism*, p. 43; *Cunningham's Bhilsa Topes*; *Ferg. and Burg. Cave Temples of India*.

CHAJ. HIND. A winnowing basket.

CHAJJAN, a fibre recently come into use at Lahore, owing to the rise in the price of other fibres. It can be purchased in Lahore at from £8 to £10 a ton.

CHAK, a portion of land divided off, an arrondissement.

CHAK of Sutlej, Hordeum hexastichon.

CHAK. BENG. Chowk, HIND. A market-place or square.

CHAK or Jag, Bhut occupants of the central part of northern Tibet. Mr. Hodgson supposed them a mixed people, engaged in predatory pursuits.

CHAK, a circle or marked-off plot; a wheel of a cart; any wheel; a potter's wheel.

CHAK or Chuk. HIND. An extract, very sour, eaten in Ajmir to give appetite and promote digestion. It is probably the extract of chuka or sorrel. One tola is sold for one anna.—*Gen. Med. Top.* p. 132.

CHAKAN, also Chakan tubunna. BENG. Celtis orientalis.

CHAKAR. HIND. A servant; hence Chakari, service; generally, however, duplicated, as noukri chakri.—*Elliot*. Chakaran, in Bengal, land set apart to provide funds for the village office-bearers.

CHAKH. CIS-SUTLEJ. A pan for receiving sugar-cane juice when boiled.

CHAKIYARA, in Malabar, a class of out-caste Brahmans.—*Wilson*.

CHAKKAN, also Chakkala. HIND. An oil-press.

CHAKKI. HIND. A small mill.

CHAKKILI. TAM., MAL. A currier, a tanner; shoemaker, the village shoemaker, known to Europeans as a chuckler. The Chakkili is one of the non-Aryan races of India.—*Wilson*.

CHAKLA. BENG., HIND. A large division of a country, comprehending several parganas. Shah Jahan, about A.D. 1772, divided Bengal into 13 chakla. The chakladar is the superintendent of a province.

CHAKLA. HIND. A stone slab for grinding on; also a pastry roller and board.

CHAKMAK. HIND. Flint. In Tamil, chaki-muki kallu.

CHAKOLTI. HIND.? A light, pale, yellow-coloured wood, not strong. Plentiful in the

Santal jungles from Ranibahal to Nonihaut for 35 miles. Furniture, tables, palkis, venetians, and doors are made from this wood.—*Cal. Engineer's Journal*, July 1860.

CHAKOOLYA. BENG. *Hemionitis cordifolia*.

CHAKOONDA. BENG. *Cassia tora*.

CHAKOON SEEDS, seeds of *Cordia myxa*. An ointment prepared from them is an excellent application for ringworm.

CHAKOR or Atash khor. HIND., PERS. The *Cacabis chukor* of Jerdon. The birds are fabled by the natives to be enamoured of the moon, and at full moon to eat fire. The two Persian words mean fire-eater. The chakor is an extremely common bird in all parts of the valley of the Indus, and throughout Tibet. In winter, when the hills are covered with snow, they are to be found in great numbers close to the rivers, even in the immediate neighbourhood of the villages; in general, when approached, they lie close among the crevices of the stones. Dr. Thomson was invited by the thannadar of Iskardo to be present at a hunting party which he had arranged for the capture of the chakor, by surrounding a spot of ground in which these birds are numerous with a ring of men, who, approaching from all directions, gradually form a dense circle of perhaps a hundred yards in diameter. When the partridges are disturbed by a horseman in this enclosure, they can only fly towards the living wall by which they are surrounded. Loud shouts and the beating of drums and waving of caps and cloaks turn them back, and they are driven from side to side, till at last, exhausted with fatigue, and stupid from the noise and confusion, they sink to the ground and allow themselves to be caught by hand. The scene was a very striking one. The spot selected was a deep dell, full of rocks, but without trees. The sport, however, did not seem so successful as usual, six or eight birds only being captured.—*Thomson's Travels in Western Himalaya*, p. 2.

CHAKOR SURK and Chakor kandla. HIND. Kinds of imported iron.

CHAKOTR, also Chakotra. HIND. Citrus decumana, Linn., the shaddock or punello.

CHAKOWAR, also Jangli-powar. HIND. *Cassia obtusifolia*.

CHAKRA. HIND. The discus of the god Vishnu, resembling a wheel or quoit; a sort of missile weapon, whirled round the middle finger, and used as a weapon of war. The chakra, in Hinduism, is mythologically described as a circular mass of fire, darting flame in all directions, which, thrown by the gods, slays the wicked, and then returns to the hand from which it issued. The Sikh Akali used to have several of them on their conical caps. They fly with great rapidity, and strike hard, but with most uncertain aim. They are expensive, and are almost useless weapons. See Hindu; Kasambi; Namam; Siva; Vishnu.

CHAKRA, in Buddhism, is the emblem of the Buddhist law.

CHAKRA, or district of Kuru-Kshetra, is also called Dharm-Kshetra, or the 'holy land,' which is Hiwen Thsang's 'champ du bonheur.' In his time the circle of pilgrimage was limited to 200 li, equivalent to 20 kos.—*Cunningham's India*, p. 332.

CHAKRA. HIND. A small coin; a country cart, a hackery.

CHAKRA-KELI ARITI or Aritiel. TEL.

Musa paradisiaca, L.; a small delicate kind of plantain. Perhaps Chakra should be read Sak-kara, 'sweet.'

CHAKRAM. SANSK. A wheel. It is now sacred to Vishnu. Chakrankam, a brass stamp; the discus of Vishnu stamped hot on his followers' arm. Chakrastambha, a pillar supporting a chakra.

CHAKRA VAKA. SANSK. Ruddy goose; the birds are supposed to be separated through the night. See Chakwa; Casarca rutila.

CHAKRAVARTI. SANSK. A paramount sovereign, an emperor. Literally, one on whom the discus of Vishnu abides. A few sovereigns in ancient times laid claim to this title, but it is now heard of only as the tribal name of a Brahman family in Bengal, under the altered form of Chuckerbutty. In Buddhism it means a universal emperor, endowed with supernatural powers; but it was in use long prior to the advancement of Buddhism. The Empress Victoria is a Chakravarti.—*Hardy's Eastern Monachism*, p. 435.

CHAKRAVARTI KURA. TEL. *Chenopodium album*, Linn. The words mean 'emperor vegetable.' Sansk. syn. *Vastuka*.

CHAKRI. BEN. Chakrikudu, TEL. An oilman.

CHAKTI. HIND. A disc or flat circular piece of steel, also a disc of leather used on the axle-boxes of carriage wheels.

CHAKWAEN, a small class of Rajputs in Ghazipur.—*Wilson*.

CHAKWAND. HIND. A weed which grows common in mango groves in the N.W. Provinces, and used as a pot herb.

CHAL. HIND. Manners, customs, commonly duplicated into Chäl Chaln, or use and wont. The chal of the Hindu, like the mores of the Romans, or costumi of modern Italy, is significant alike of the mental and external habit. In the moral point of view, it is the path chalked out for him by the sages of antiquity; in the personal, it is that which custom has rendered immutable. Kya boora chal chalta,—In what a bad path does he march! says the moralist. Bap, Dada, chal chora,—He abandoned the usages of his ancestors, says the stickler for custom. Nek-chal, good, and bad-chal, bad habits.—*Tod's Rajasthan*.

CHALA. HIND. *Cicer arietinum*.

CHALA CARNA, written Chila cärna. This Hindu astronomical term means the true distance of a planet from the earth, in contradistinction to its mean distance, or the radius of the Cacsha or deferent. See Carna.

CHALAI of Kaghan, *Juniperus excelsa*; J. arborea, pencil cedar. See Charai.

CHALAN. HIND. A permit, any invoice; a pass, a list. Chalaoni, current coin.—*Elliot*.

CHALAN BIL, a large marsh in the Rajshahi district of Bengal, about 21 miles long and 10 miles broad. It is said to give rise to outbreaks of cholera.—*Imp. Gaz.*

CHALAPACHCAHI. TEL. *Indigofera enneaphylla*, L.

CHALAR. HIND. The Persian wheel of a common well transferred to the bank of a canal, margin of a jhil, or high bank of a river.

CHALAVADI. KARN. A low caste of S. India; also in Mysore, the servant of a Linga merchant, carrying a large ladle with chain and bell on his shoulders. In Telingana, a Sudra who goes from house to house to give notice of a death.

CHALAVA MIRIALU. TEL. Cubebs.

CHALCEDONY, a quartzose mineral found at Cambay and in many parts of India.

CHAI-CHAHRA. HIND. *Parmelia Kamschadalica*, and other species of lichens.

CHALCOPHAPS INDICUS. L. Called by the Singhal-se Neela cobeya. A bird of Ceylon, strikingly elegant both in shape and colour; has a pleasing note.

CHALDÆA is derived by Pococke from Kula, a tribe, and Deva, a god or Brahman. Professor Rawlinson indicates Chaldæa as a part of the great Mesopotamia plain, bordering the Persian Gulf on the south, with Arabia on its west, and the limit between Lower and Upper Mesopotamia on the north. Chaldæa seems to have been divided into a northern portion, from Hit to Babylon, and a southern portion, from Niffer to the shores of the Persian Gulf. In each of these there seems to have been a tetrarchy, viz. Babel, Erech, Accad, and Calneh, in the land of Shinar (Genesis x. 10), and Hur or Huruk, Nipur, and Larsa or Larancha, which seem to be the scriptural Ur of the Chaldees, Erech, Calneh, and Ellasar. The northern tetrarchy was Babel or Babylon, Borsippa, Cutha, and Sippara, the last the Sepharvaim of Scripture. The discovery by Sir Henry Rawlinson of the Eponym Canon of Nineveh was the means of placing the chronology of Assyria, from the early part of the 8th century B.C. until the middle of the 7th, on a firm and accurate basis. The recovery of the state records from the treasury of Babylon, in 1875, by the discovery of the series of inscriptions known as the Egibi tablets, gave a clear guide for the chronological arrangement of the rulers of Babylon, from the accession of Nebuchadnezzar in B.C. 605 until the reign of Darius Hystaspes. The gap in the chain of chronological documents from B.C. 640 until the rise of the Babylonian empire, has been filled up by the discovery, in the treasury at Sippara, of a series of contracts and fiscal documents dated in the reigns of Samassumukin and Kindalānu, Chaldæan kings, whose reigns are to be identified with those of Saosduchinus and Kiniladanus of the Canon of Ptolemy.

The first dynasties transmitted by Berosus, which are confirmed by the Canon Inscription, are rather to be regarded as marking epochs in national life and development than royal lines. The antediluvian period was the great mythic age. It was, in fact, the reign of the gods, similar to the first of the dynasties of the Egyptian empire; and it was regarded as the dawn-age of Chaldæan social and religious life, and each caste in Babylonian society placed its mythic founder in this period before the flood. Separated from this dynasty by the 'waters of the Deluge,' was the second period in Chaldæan history—the heroic age, the period of the ethnic myths. Chaldæan history proper begins with the Median conquest, an event which, guided by the Canon Inscription, cannot be placed earlier than the 20th century before the Christian era; but long prior to this, civilisation had made great progress in the city kingdoms of Chaldæa. In the marshland of Chaldæa, the region called in the Deluge legend, the 'land at the mouth of the rivers,' the most ancient traditions of Chaldæan civilisation were located. The dwelling of the translated Xisuthrus was there; and from the shores of the Persian Gulf rose the Annetotus

Oannes, the Chaldæan Dagon, who first instructed men in the elements of civilisation, in the rudiments of art, science, and letters, and laid the germs of the civilisation which in after time bore such rich fruit in the schools of Babylon and Nineveh. This district, the cradle of western Asiatic culture, was the seat of three of the most ancient cities of the Chaldæan empire. In the immediate neighbourhood of the Shat-el-Hie, which leaves the Tigris at Kut Amareh, and enters the Euphrates near Gommerek, after a winding south-westerly course through marshes of the Afadj district, are to be found, on the north bank, the mounds of Warka and Niffer, which mark the sites of the ruins of Erech and Calneh, cities of Nimrud; and M. de Sarzec brought to light the ruins of another city contemporaneous with the cities of the mighty hunter's kingdom. On the west bank of the Euphrates, at Tel Mughier and at Rata, are the ruins of cities closely connected with Semitic and Biblical traditions, the former being the site of Ur, the birthplace of Abraham, while Chaldæan tradition locates the 'garden of Eden,' with its sacred tree, in the city of Eridhu, whose position corresponds with the modern town of Rata. Therefore both tradition and the historic records of Chaldæa point to this region of southern Chaldæa, the Sumir of the inscriptions, the Shinar of the Bible, as the cradle of the learning and wisdom of Chaldæa.

The inscriptions of Sennacherib and Assur Bani-pal and the lines of sculptured bas-reliefs show that these marshlands were the dwelling-places of a race distinct from the Assyrians and Babylonians, and who bore many traces of being relics of the aboriginal population. During the explorations of Sir Henry Rawlinson and Mr. Loftus in these regions, some few inscriptions and bronze implements were obtained from a mound called Tel Ho, on the Shat-el-Hie, near to the marshy shores of the Wasut lake or pool. By his exploration in this mound, M. de Sarzec has brought to light the ruins of an important edifice, either a palace or temple, which dates from the earliest days of Chaldæan monumental history, and whose builder was contemporary with Libbagnas or Uruk, the Orchanus of the classics, the builder-king of Ur. In the ruins of this edifice were discovered numerous valuable monuments, statues of priests and kings, cut out of hard porphyry, granite, and diorite, while there were numerous others in terra cotta and marble, as well as some valuable specimens of the primitive bronze-founder's work. This ancient city is Sergulla, a name which means the 'city of the great light;' and it was one of the chief seats of Chaldæan fire-worship. So impenetrable are the marshes of the Afadj, and so little subject to external influence, that the name which more than 40 centuries ago denoted the Chaldæan Pyropolis, is still extant in the Arabised form of Zerghul, as the local name of the region in which Tel Ho is situate. From the monuments we are able to trace two types of people, whose features are transmitted to us with extreme fidelity by the primitive sculptors. The first is a beardless type, with a head, as far as we can judge from the statue, of a brachycephalic type, but with distinctly orthognathous features, and therefore with no tendency to the African Negro type. The features, as judged from the finely-carved head discovered by M. de Sarzec,

are distinctly of the Mongoloid type, and of the Ugro-Finnic branch. This first type, again, bears a remarkable resemblance to the Elamite and Sasanian people as figured on the sculptures from Nineveh; and this ethnic similarity receives additional support from the philological agreement which is found to exist between the language of these inscriptions and those of the Turanian tribes of Elam and Media. The head found by M. de Sarzec represents the figure as wearing a close-fitting cap bound round with a decorated turban, a type of head-dress worn by the Elamites in the time of Sennacherib and his successors, and by the Tartar tribes of Central Asia. The second type of features preserved to us, is that of a bearded race with a more Caucasian type of features, with long straight hair. The type is somewhat difficult to recognise, but it is certainly distinct from the first or from the Semitic Assyrian.

Thus, in the very earliest dawn of Chaldean history, we find people of a distinctly Mongoloid or Turanian type in the oldest cities of the empire, with inscriptions written in an agglutinative dialect, and in a script bearing, as M. Terrien de la Couperie has shown, a curious resemblance in its commonest ideographs to the script first propagated by the Hundred Families of the Celestial Empire. An ingenious attempt has recently been made to assign a Chaldean origin to Chinese. In 1842, M. Pauthier attempted to prove the identity of the Egyptian and Chinese system of figure-writing.

The discovery of bronze figures and implements in the excavations, the former bearing inscriptions of Gudea and of other early primitive kings, show that at a very early period metallurgy had reached a considerably advanced stage among the settlers in these low, marshy regions. The city of Sergulla was, as the great fire-city, also the earliest seat of the workers in metals, who from this primitive centre supplied the surrounding cities with weapons or statues for their temples and shrines.

The elaborate network of canals which thread the plains, rendered the internal communication of Chaldæa of a highly perfect character. On the banks of these ancient canals we find the most ancient cities of the empire; and the flow of commercial intercourse which made Babylonia the chief of merchant-land, was greatly stimulated by this excellent system of trade intercourse. The Shat-el-Hie, through which the fleet of Sennacherib was navigated in its expedition against the tribes on the shores of the Persian Gulf, was the grand junction canal of Southern Chaldæa; while the Yussifich canal, which crosses the upper plain of Chaldæa some 20 miles below Baghdad, was the chief artery of Upper Chaldæa or the province of Akkad. The mound of Abu Hubba marks the site of the ancient city of Sippara, the Chaldean Heliopolis, one of the dual cities of Scepharvaim. Bit Parra, the chief fane of the sun-god in Sippara, was not only the dwelling-place of the patron deity of the city, but was also the chief law court and chancery of the district, and the centre to which flowed all the commercial and fiscal transactions of the province of Akkad, or Northern Chaldæa. The excavators at Abu Hubba penetrated into the Bit Nizirti, or treasury of the temple, and within it were found stored

over ten thousand inscribed tablets relating to the commercial and fiscal life of Babylonia. The bronze figures of priests in the British Museum, and the statue of the mother goddess, bearing an inscribed legend of Kurduṛmabug, are both examples of the founders' art and product of the forces of Zerguhl.

Astronomy seems to have originated with them. They invented and employed a saros, or restitution period of 18½ years. They latterly chose the heavenly bodies as types of the divine attributes, and in later times made them objects of adoration, particularly revering planets. They were acquainted with the precession of the equinoxes, making use of a tropical year of 365 days 5 hours 49 minutes 11 seconds (only 25 seconds too great), and a sidereal year of 653 days 6 hours and 11 minutes. They knew the art of dialling. By the saros period they were able to calculate and predict lunar eclipses, and the days on which the sun's eclipses might be expected. This period is still used by astronomers. The great centre of Chaldean mathematic learning was the city of Larsa, from the library of which came the tables of square and cube roots. It is therefore very interesting to find upon some of the tablets from this ancient city, rudely-drawn plans or geometrical figures. These tablets seem to point to a school of geometry as in existence in this ancient seat of Chaldean learning. There are already in the British Museum fragments of tablets which have come from Babylon, Calah, and Nineveh, which show that divination by geometrical figures was in use among the primitive magicians of Chaldæa.

The first metrical weight was determined by the Euphrates; for the Babylonian talent, which they originated with the mine and shekel, corresponded exactly with a Babylonian cubic foot of water at the mean temperature of that country. The talent, mine, and shekel became the monetary standard of Western Asia. They divided the circle into 360 degrees, and these again into 60 fractions. Their figures reached to a hundred; yet they also had special signs for 60, or a sossos, as well as for the saros or square of the sossos, and they invented the positional value of figures.

In the Chaldean mythology—

Il or Ra—Ra is Chaldee, Il is Semitic; from Il is El, Elohim, Allah—is God.

Ana, God, the Supreme.

Anata, the female of Ana, the power of Ana.

Beltis, wife of Bel Nimrud, in Chaldee called also Mulita or Enutes. In Assyria she was called Bilita or Bilita Nipruta, and Ilt Ana.

Hoa or Hca, god of life, the third deity of the triad. He is god of knowledge, the king of rivers, and came from the sea to teach the Babylonians. His emblems are a wedge, a serpent.

Div Kina, wife of Hoa.

Sin or Hurki, the first god of the second triad in the moon deity.

San or Sanni, the sun-god; in Semitic Shamus; also probably Parra, perhaps the Ph ra or P' ra of the Egyptians.

Al, Gula, or Ananit, the female power of San. She presides over life and over fecundity. Her emblem was an eight or a six rayed star.

Vul or Iva, the god of the atmosphere, is the third deity of the second triad, moon, sun, and atmosphere—the rain-giver.

Bar, Nin or Ninip, the fish god; lord or master; the analogue of Hercules. His emblem the man-bull.

Bel Merodach, the planet Jupiter.

Zir Banit, wife of Bel Merodach.

Nergal, the planet Mars; emblem, the man-lion.
 Ishtar or Nana, the planet Venus, the Phœnician
 Astarte, the Hebrew Ashtoreth; in Babylonia
 called Nana, seemingly Nanna of Maccabees i.
 13-15, and the Nani of the modern Syrians.
 She had many appellations.

Nobo, the planet Mercury.
 Varamit or Urmit, wife of Nebo.

—*London Times*, 25th May 1882; *Proctor, Saturn and its System*, London 1865; *Rawlinson: Bunsen*; *Yule's Cathay*, i. p. 54; *Layard's Nineveh*, i. p. 266. See Babylonia.

CHALDEE, an Aramaic dialect, differing but slightly from the proper Syriac. Ezra iv. 8 to vi. 8 and vii. 12-26; Daniel ii. 4 to vii. 28, and Jeremiah x. 10, are written in the so-called Chaldee. There is also a Chaldee gloss in Genesis xxvi. 47. The Babylonian language in the time of Nebuchadnezzar was very close to Hebrew. The Chaldee language may have been that of Terah; but the possibility of the language of Abraham remaining in its original state during the 216 years that he and his family resided in Canaan, and the 430 years that the Hebrews abode in Egypt, and the 400 years from the exodus to David, is untenable.—*Layard, Nineveh*, i. p. 266; *Rawlinson*.

CHALDEE or Kuldi, a race usually called Nestorian Christians, but they do not acknowledge the correctness of the designation. Matran Hanna, the Syrian patriarch at Mosul, gave Mr. Rich the names of the following tribes of this people, whom he called Nestorian Christians.—The Tiyari, Tkoo, Jelooli, Liweeni, Beerwaree, Nerooi. There are both Mahomedans and Christians of the Nerooi and Beerwaree tribes; the others are all Nestorians. There are four villages of Nestorians near Amadia, called Gheranmoosi, who wear felt hats. The Tiyari are an independent Christian tribe of the Chaldee people, who are much dreaded by all the Mahomedans. These Christian tribes are geographically within the limits of the territory of Hakkari.—*Rich's Kurdistan*, i. p. 156.

CHALI. HIND. *Amphicome arguta*.

CHALIA. SINGH. A race in Ceylon who cultivated the cinnamon tree; Peelers. This caste form the majority of the rural population near Galle in Ceylon. They came originally from the coast of India as weavers or embroiderers.—*Tennant*.

CHALICIDES, a family of lizards, which, like the seps-lizards, are very long and serpent-like. There is a species with five toes in the East Indies, the *Lacerta seps* of Linnæus.—*Eng. Cyc.* p. 921.

CHALIS-SATUN. HIND. Literally forty pillars; a pavilion built by Akbar, attached to the palace at Allahabad. See Chahl.

CHALITA. HIND. *Dillenia speciosa*.

CHALK. Carbonate of lime.

Tyn-abyas, . . .	ARAB.	Capur engris, . .	MALAY.
Mye-bow, . . .	BURM.	Gil-i-safid, . . .	PERS.
Hwa-fen, . . .	CHIN.	Oreda,	PORT.
Poh-tu-fen, . . .		Mjel,	RUS.
Vilaiti chunna, . .	DUX.	Din-so-phang, . .	SIAM.
Craio,	FR.	Ratta-hunu, . . .	SINGH.
Kreide,	GER.	Greda,	SP.
Kurru,	GUJ.	Sima chunambu, . .	TAM.
Kharri matti, . . .	HIND.	Sima sunnam, . . .	TEL.
Creta,	IT.		

This is said to be found in the Dhone taluk of Kurnool, but it is generally imported from England. When prepared it is called whiting. Other

preparations are used in the arts and in medicine. Black chalk, used in the arts, is a dark-coloured clay.—*Royle; Faulkner; Ainslie; Smith*.

CHAL KUMRA. HIND. *Benincasa cerifera*.

CHALLA. HIND. A thumb ring, and a great toe ring.

CHALLA GADDA. TEL. *Asparagus adscendens, Roxb.*; *A. racemosus*. Challa Gummudu, *Gmelina parvifolia*. Challa means butter-milk. Churning-sticks are made from this shrub.

CHALLAMBRAM, a town in the South Arcot district of Madras, famed for its pagodas.

CHALLA MUNTA. TEL. *Fluggea leucopyrus, Willd.*

CHALM-CHI. HIND. A wash-hand brass basin.

CHALO-DHONA. URIA. *Erythrina Indica*.

CHALODRA. HIND. *Elcusine coracana*.

CHALON. HIND. *Populus ciliata*.

CHALUKYA, also called Salunki, a race known as one of the four tribes of Agnicula Rajputs, the other three being the Chauhan, the Pramara, and the Puribara. The Chalukya claim to have been princes of Sooru on the Ganges. They are divided into sixteen branches, viz.:

Bhagela.—Raja of Baghelund (capital Bandugurh), Raos of Pitapur, Theraud, and Adaluj, etc.

Birpura.—Rao of Lunawara.

Behila.—Kulianpur in Mewar, styled Rao, but serving the chief of Solumbra.

Bhurta and the Kalacha.—In Baru, Tekra, and Chahir, in Jeysulmir.

Langaha.—Mahomedans about Multan.

Togru.—Mahomedans on the Punjnad.

Briku.—Mahomedans on the Punjnad.

Surki.—In Dekhan.

Sirwureah.—Girnar in Saurashtra.

Raoka.—Thoda in Jeypore.

Ranikia.—Daisoori in Mewar.

Kharura.—Allote and Jawura in Malwa.

Tantia.—Chandbhur; Sakunbari.

Alnotcha.—No land.

Kulamor.—Gujerat.

The Chalukya once held sway in Gujerat, Kandesb, Kaliani, and Warangal.

This is the oldest ruling race of which we find satisfactory mention made in the records of the Dekhan. The inscriptions collected by Sir W. Elliot relate to four dynasties of princes, reigning over the greater portion of that part of India now denominated the Dakshina or Dekhan, but at that time Kuntala-desa.

The Pallava were the dominant race in the Dekhan previous to the arrival of the Chalukya. In the reign of Trilochana Pallava, an invading army, headed by Jaya Sinha, surnamed Vijaya-ditya, of the Chalukya Kula, crossed the Nerbadda, but failed to secure a permanent footing, and he seems to have been killed. His queen gave birth to a posthumous son, in the house of a Brahman named Vishnu Somayaji. The son was called Raja Sinha, but afterwards assumed the royal titles of Rana Raga and Vishnu Vard'hana. He successfully renewed the contest with the Pallava, and married a princess of that race. A copper sasanam of his son and successor Pulakesi, bearing date s.s. 411 or A.D. 489, is in the British Museum. From Raja Sinha's first conquest, the whole period of their rule would be about seven centuries. Raja Sinha's great-grandson, Kirtti Varma, had two sons, one of whom ruled in Kalyan, the other in Telingana, after conquering Vengipuram, the capital of Vengidesam.

The Kalyan branch was subverted for a time in the end of the 9th or beginning of the 10th century, and the emigrant prince or his son succeeded by marriage, in A.D. 931, to the throne of Anhalwara Pattan in Gujerat, which his descendants occupied with great glory until A.D. 1145. But in A.D. 973 the dynasty of Kalyan was restored in the person of Tailapa Deva, and ruled with greater splendour than before, till its extinction in A.D. 1189 by Bijjala Deva, the founder of the Kalab'huria dynasty.

The branch in Telingana fixed their capital at Rajamahendri, the modern Rajamundry. They appear to have effected their entrance into Telingana Balaghat by the conquest of Vengi in the 6th century, and, after several changes, the dominion passed by marriage to Rajendra Chola, then the dominant sovereign of Southern India, in whose person the power of the Chola dynasty reached its height. The following were the rulers of the Chalukya dynasty of Kalyan:—

Jaya Sinha Vijayaditya I.
Raja Sinha, Rana Raga,
Vishnu Vardhana.
Vijayaditya II.
Pulakesi, A.D. 489.
Kirtti Varma I.
Mangalisa.
Satyasraya began to reign
609.
Amara.
Aditya.
Vikramaditya I.
Vinayaditya, Yuddha
Malla began to reign A.D.
680.
Vijayaditya III. began to
reign A.D. 695.
Vikramaditya II. began to
reign 733.
Kirtti Varma II.
Kirtti Varma III., cousin
of last, 799.
Tailapa.
Bhima Raja.
Ayya or Kirtti Varma IV.
Vijayaditya IV.
Taila Bhupati II., or Vikrama-
ditya III., in A.D. 973
restored the monarchy,

which had been some
time usurped by the
Ratta Kula. He died
A.D. 997.

Satasraya II., Irivi Bhuj-
anga Deva, A.D. 997.
Vikramaditya V. began to
reign about A.D. 1008?
Jaya Sinha Deva, Jagadika
Malla, about A.D. 1018?
Someswara Deva I., Trailo-
kya Malla, Ahawa Malla,
about A.D. 1040.
Someswara Deva II., Bhu-
neka Malla, A.D. 1099,
expelled by his brother.
Vikramaditya V., Kali
Vikrama, Tribhuvana
Malla, in A.D. 1076.
Someswara Deva III., Bhu-
loka Malla, A.D. 1127.
Jagadeka Malla, A.D. 1138.
Tailapa Deva III., Trailoka
Malla, A.D. 1150.
Someswara Deva IV., Tri-
bhuvana Malla, A.D. 1182;
dethroned by Bijjala
Deva of the Kalab'huria
line.

The style and titles of the Chalukya of Kalyani were Chalukya Kula, Manavyasa Gotra; Hariti putra; whose royal power was the gift of Kausika, nourished by the seven mothers, worshipping Swami Mahasena; having the boar signet (lanch'hana), the gift of Bhagavan Narayana.

Their insignia of royalty consisted of the

Swetāta Patra, the white canopy.
Sanka, the conch (chank) shell.
Pancha Maha Sabda, the martial drum.
Hala Kētana, the plough ensign.
D'hakka, the drum.
Varaha lanch'hana, the boar signet.
Mayura Pinch'ha, the peacock fan.
Kunta, the spear or mace.
Sinhasana, the throne.
Makara toranam, the royal arch.
Kanaka-dandam, the golden sceptre.

Their boar ensign was the most celebrated, and was the symbol invariably represented on their money and on their seals, sometimes, in the latter, accompanied by the conch shell, the drum, the peacock fan, or a lotus, an elephant goad (ankus), candelabra, a seat or stool, the swastika cross ♣, and latterly a sword. It was from the boar on the Chalukya coin that the people of the Penin-

sula of India give the name 'Varaha' to the pagoda, varaha mudra, or boar stamped.

Chalukya dynasty of Rajmahendri:

- | | |
|--|---|
| 1. Vishnu Vardhana II., or Kubja Vishnu Vardhana; conquered Vengi, A.D. 605. | 17. Vijayaditya IV., or Kandagachita Vijaya. |
| 2. Jaya Sinha I. | 18. Talapa, usurper. |
| 3. Indra Raja, his brother. | 19. Vikramaditya V., the son of a brother of Amma Raja I. |
| 4. Vishnu Vardhana III. | 20. Yuddha Malla. |
| 5. Manga Yuva Raja. | 21. Raja Bhima II. |
| 6. Jaya Sinha II., | 22. Amma Raja II. |
| 7. Kokkili, | 23. Dhanarnava. Interregnum of 27 years. |
| 8. Vishnu Vardhana IV. | 24. Kirtti Varma, son of Dhanarnava. |
| 9. Vijayaditya I. | 25. Vimaladitya, his bro'r. |
| 10. Vishnu Vardhana V. | 26. Raja Raja Narendra. |
| 11. Narendra Mriga Raja. | 27. Rajendra Chola. |
| 12. Vishnu Vardhana VI., or Koli Vishnu Vardhana. | 28. Vikrama Deva Kulothinga Chola. |
| 13. Vijayaditya II., or Guna Gunanka Vijayaditya; conquered Kalinga. | 29. Raja Raja Chola, viceroy for one year. |
| 14. Chalukya Bhima I., his brother. | 30. Vira Deva Kulothinga Chola, or Saptama Vishnu Vardhana, viceroy from A.D. 1079 to 1135. |
| 15. Vijayaditya III., or Kolabhoganda Vijaya. | |
| 16. Amma Raja I. | |

The country fell under the sway of Warangal. The family spread southwards into what is now known as Mysore, where they were afterwards the parent stem of the Hoisala Bellala dynasty of Dwara-samudra. They seem to have been of the Jaina faith, but to have subsequently adopted the Vaishnava and Saiva forms of Hinduism. A ruined temple at Buchropully, near Hyderabad, and temples at Hammoncondah, near Warangal, are in a style of architecture followed during Chalukya supremacy. At Warangal also are four pillars, Kirti-Stambha, which were set up by Pratapa Rudra, who had also erected the great temple at Hammoncondah.—*Thomas' Prinsep's Antiquities*; Sir W. Elliot, M. L. S. J., 1858; *Elphinstone; Ferguson, Architecture*, pp. 389, 731; *Tod's Rajasthan*, pp. 80-97. See Hoisala Bellala.

CHALUN of Kotgarh. *Populus ciliata*.

CHALUNDAR. HIND. *Iris Nepalensis*.

CHALYBEATES. There is no one district in which they have been found more frequently than another, unless the outer ranges of the Himalaya; the wells in the Neilgherries are said often to have a trace of iron. None of the Indian chalybeates are thermal; and none of those known, except that at the beautiful spot Nagconda, appear to be strong ones; there are many undescribed chalybeates in the Himalayas. One at Chumba may prove of value.

CHAMA. TEL. *Colocasia antiquorum*.

CHAMA, a genus of the mollusca. *C. albidus*, *C. asperella*, *C. echinulata*, *C. gigas*, *C. graphoides*, *C. gryphoides*, and *C. unicornis* occur in India. *C. gryphoides* (*C. gigas*, Linn.) is famous for its enormous size. Individuals have been known to weigh above 300 lbs. The byssus by which it adheres to rocks is so tough, that in order to procure the shell it must be cut with an axe. The animal may be eaten, but its flesh is very tough. One of the valves is sometimes used as a font for baptism in the country churches of Europe. The species are confined to the warmer seas, the Mediterranean being the locality of the lowest temperature where any of them have been hitherto found.—*Eng. Cyc.* p. 931.

CHAMÆLEO VULGARIS, the chameleon.

C. calcaratus, <i>Morren.</i>	C. Parisiensis, <i>Laurent.</i>
C. carinatus, "	C. Zeylandicus, "
C. subroceus, "	C. Mexicanus, "
C. mutabilis, <i>Meyer.</i>	C. zebra, <i>Bory.</i>
C. cinereus, <i>Aldrovandus.</i>	L. chameleon, <i>Linn.</i>

It is a native of the East Indies, and is the species which is most frequently taken to England. *Ch. bifurcus*, *cucullatus*, *lateralis*, *Parsonii*, *rhinocerotus*, and *verrucosus* are natives of Madagascar, *Pardalis* of Bourbon, and *Tiaris* of the Seychelles.—*Eng. Cyc.* p. 937. See Chameleon.

CHAMÆROPS, a genus of Asiatic palms, some species of which furnish useful products. *C. excelsa* produces the So-e of China, a brown fibre surrounding its trunk, very strong, and employed by the Chinese in many domestic purposes, as for bed bottoms, and used by all the population for ropes and cables for their junks; it grows in northern and central China, and in Japan. The hairy covering of this fan-palm and of *Livistonia Chinensis* are utilized in Japan for fixing lime plaster to buildings.—*Mueller; Seeman.*

CHAMÆROPS FORTUNEI, *Hooker*, Tsung-lu, and Ping-lu, CHINESE, is a palm of the south of China, and as far north as Yang-tsze, growing upwards of 30 feet high. The fibrous integument is annually removed, and steeped in water to separate the wiry fibre. The bark can be used as splints; also made into matting, combined with fibre. Fans are made of the leaves; and the young flower-buds are eaten, similarly to bamboo sprouts, *Smith*. It stands great cold.

CHAMÆROPS HUMILIS, or Palmetto, occurs from the south of Spain and Portugal eastward, along both shores of the Mediterranean to Asia Minor, often covering extensive tracts of sterile, sandy, or stony ground, and the trunk rarely rising, excepting where protected, more than 1 to 3 feet above the surface. The heart is sold as food in the Algerian markets; the leaves are used in matting, for plaited work, for baskets, brooms, mats, and cordage, and paper and pasteboard.—*Royle, Fib. Pl.* p. 95.

CHAMÆROPS KHASIANA. *Griffiths*. The fan-palm ('Pakha,' KHAS.) grows on the cliffs near Mamloo, on the Khassya hills. It may be seen on looking over the edge of the plateau, its long curved trunk rising out of the naked rocks, but its site is generally inaccessible; while near it grows the *Saxifragis ciliaris* of English gardens, a common plant in the N.W. Himalaya, but extremely scarce in Sikkim and the Khassya mountains. *Ch. Khasiana* is very closely allied to, if not identical with, *Ch. Martiana* of Nepal, which ascends to 8000 feet in the Western Himalaya, where it is annually covered with snow; it is not found in Sikkim.—*Hooker, Hlm. Jour.* ii. p. 280; *Mueller*.

CHAMÆROPS MARTIANA, *Wall.*, *Griffiths*. Trunk 20 to 50 feet high, and is a noble object. It grows at Bunipa in the valley of Nipal, at an elevation of about 5000 feet above the level of the sea. Newar name, Tuggu.

CHAMÆROPS RITCHIANA. *Griffiths*.

Peer putta, . . . HIND. | Kilu; Kalian, PUNHTU.
Maizurtye, Pis, PUNHTU. | Peees, . . . SIND.

Grows in masses below 5000 feet on the barren hills and passes lending up into the table-lands of Baluchistan and Afghanistan. Its leaf-bud or cabbage is eaten. The red mossy-looking rete from the axils of the leaves, with saltpetre, is

used for tinder. Its leaves, p'furah or phurra, are fabricated into baskets, fans, brushes, sieves, shoes, sandals, pouches, platters, and ropes for water-wheels. Large quantities of the stones of the fruit (which, *Trans-Indus*, ripens about July) are exported from Gwadur to Muscat, en route to Mecca, to be manufactured into rosaries for the pilgrims.—*Stewart, Panj. Pl.* p. 243; *Seeman*.

CHA-MAHI-DAR, properly Che-mahi-dar. HIND. Farm servants, hired for six months.

CHAMAINDOO-POO. TAM. Canonmile; *Anthemis nobilis*, *Linn.*

CHAMAKHRI. HIND. *Michelia champaca*.

CHAMAK PATHAR. HIND. Oxide of iron, magnetic iron ore. Chamak, 'glancing.'

CHAMAIU. TEL. *Oplismenus frumentaceus*.

CHAMANTI. TEL. Applied indifferently to all the cultivated kinds of chrysanthemum.

CHAMAR, a scattered race in India. In Northern India, the Chamar race is generally said to be subdivided into seven sections, Jatooa, Kacan, Kooril, Jyswara, Jhoosea, Azingurha or Birherea, and Koree or Korchamra, who do not eat together nor intermarry. The Jatooa are chiefly in the north-west, Delhi, Rohilkhand, and the Upper and part of the Central Doabs. The Kacan are in Bundelkhand and Saugor. The Kooril occupy the greater part of the Central and Lower Doabs. The Jyswara meet them in the neighbourhood of Allahabad, and extend through Jounpur, Mirzapur, and Benares, to the neighbourhood of Sydpur Bhitree, where they are met by the Jhoosea, who occupy Ghazipur and Behar. The Azingurha have their seats in Azimgurh and Gorakhpur; and the Kori or Korchamra in Oudh. The last are generally engaged in the occupation of weaving. Others are mentioned besides these, as the Jatote of Rohilkhand, the Ahurwar, Sukurwar, and Dohur of Central Doab; but as these latter avow some connection with the Kuril, they may perhaps be included in that tribe. In Behar we meet also with subdivisions of Gureya, Magahi, Dukshinia, Canoujca, as well as the Jhoosea and Jyswara above mentioned, —all tending to show that the division into seven clans is imaginary.

The Dohur are mentioned in Steele's Summary, p. 128, as existing in the Dekhan along with Kutni (cobblers) and Dughurs (Dubgar, maker of oil-bottles); but he does not include them amongst Chamars, of whom he enumerates the following classes: Sultunger, Marat'he, Paradosh, Purdeai, Huralbhtel, Dubali, Woje, Chour.

Chamars are a dark race, and a fair Chamar is said to be as rare an object as a black Brahman.

Kurea Brahman gor Chamar.

In ke sat'h na ootriye par.

That is, 'Go not in the same boat with a black Brahman or a white Chamar, both objects being considered of evil omen.' Many of the Chamar of the Central Provinces have joined the reformed Sat-nami sect. The Chamar of Hindustan, in respect to members and avocations, are in the same position as the Pariabs, Chakkili, Mhar, Mhaug, Hollar races of the south of the Peninsula, where the designations of tanners and leather-workers are—

Sanigar, Madiga, . . . CAN.	Chakkili, . . . TAM.
Madaru, Madigaru, COORG.	Madiga, Madira, . . .
Chamar, . . . HIND.	Madgolou, . . . TEL.
Mhang, . . . MAHR.	

The Mang or Mhang are scattered through all the north-western parts of the Indian Peninsula, in the Bombay Presidency, in Gujerat, Kandesh, the Konkan, and Kolhapur.

Tanners and leather-workers are perhaps the most humble of all the settled races in the south of India. There they dwell outside the walls of the villages. They are deemed wholly unclean. They are tanners, workers in raw hides and leather, shoe and harness makers, messengers, scavengers, and executioners. They are never horse-keepers, and only a very few have ever been known to have the ability to read or write. The race, as a rule, are of a dark, black hue, short in stature, and of very slender frame; lower limbs particularly slight, and calf and foot delicate. They still eat creatures that most races regard as unclean, and likewise eat animals which die of disease. In rural villages they perform the lowest menial offices, such as messengers and scavengers, and are paid by portions of the crops and some small privileges, but are not permitted to reside within the village walls. The Madaru and Madigaru of Coorg are predial slaves, and seem identical with this race. The Madaru make baskets. In Northern India and in Bengal the Chamar race are workers in hides and leather, tanners, and shoe and harness makers, and there form the great bulk of the labourers, taking the place of the Dher and Pariah of the Peninsula. There are many sections of leather-workers throughout the Hyderabad country, and in Berar they serve as scavenger, guide, watchman, and executioner. Their signature mark is a knife. They are part of the Baluth, and, like the Pariah, are the predial slaves of the village. The Pendi Mang are athletes. The Mhang worship the leather ropes which they make. They also make cakes, which they place in the ground, and over it five stones and a lamp, and worship these. They also worship the spirits of departed men who have led evil lives. They claim the right to have for food cattle and camels and horses that die of disease, but in some villages this is disputed by the Dher or Pariah; and in the village of Dangopura, in 1866 and 1867, this point was for twenty months under litigation, the ultimate decision being in favour of the Dher. In the Northern Dekhan are the sections Mang Garoro, Hollar Mang, Dekhan Mang. The Mang Garoro are also styled 'Pharasti' or migrants, as they have no settled abode, but move from place to place begging; their men and women assume other clothes, and smear their foreheads with the red kuku, a mixture of turmeric and safflower. They also are conjurors and sleight-of-hand adepts, from which they have their name Garori. The men also beat the drum.

The Bandela and Kuillar Chamar is a tanner and shoemaker; Mahratia Chamar, a shoemaker; Pardesi Chamar, a cobbler; Mang Chamar, who makes sandals; Mahomedan Chamar, who is a bookbinder; Katai Chamar, who make shoes and sandals, and labour in the fields at seed and harvest times. The Katai are identical in personal appearance with the Chuckler (chakkil) of the very south of India.

The Chamar of Aurangabad worship Mariamra and Sitla. They marry when under age amongst themselves, proceeding on foot to the goddess Sitla, whose shrine they circumambulate five

times. The expense is about a hundred rupees. They speak Hindi. They burn their dead; but some very intelligent men at Aurangabad did not know that anything followed death.

In the great isolated plain of Ch'hattisgarh, where the jungle has not even yet been thoroughly mastered by man, the Chamar, who make up some twelve per cent. of the population, are nearly all cultivators. The creed adopted by them is the 'Satnami' or 'Rai Dasi,' a branch of one of the most celebrated dissenting movements in Indian religious history. No images are allowed; it is not even lawful to approach the Supreme Being by external forms of worship, except the morning and evening invocation of his pure name (Satnam), but believers are enjoined to keep him constantly in their minds, and to show their religion by charity. Even if the creed be weak as a moral support, it is strong as a social bond; and, no longer weighed down by a sense of inferiority, the Satnami hold together, and resist all attempts from other castes to re-assert their traditional domination over them. They are good and loyal subjects; and when they have grown out of a certain instability and improvidence, which are the natural result of their long depressed condition, they will become valuable members of the community.—*Rost, Edition of Wilson's Essays on the Religion of the Hindus*, i. p. 113 (1862).

CHAMAR. HIND. *Ehretia aspera*.

CHAMARA, Chawri, or Chowri. HIND. A whisk, made sometimes of peacock's feathers, sometimes from the tail of the yak, sometimes of the shavings of sandal-wood, of horse hair, or of grass, and used for the purpose of driving away flies, mosquitoes, and other insects. They are usually seen in the hands of the attendants of the Hindu gods. The chamara or chawri from the white bushy tail of the Tibet cow, was, in ancient India, fixed on a gold or ornamented shaft, between the ears of the horse, like the plume of the war-horse of chivalry; the banner or banneret, with the device of the chief, rose at the back of the car; sometimes several little triangular flags were mounted on its sides. 'The waving chawri on the steed's broad brow points backwards motionless as a picture.'—*Coleman*, p. 376; *Hindu Theatre*, i. p. 199.

CHAMARFO of Spiti, a deep red earth used in dyeing.

CHAMAR GAUR, a division of the Gaur Rajputs, the highest class, although from their name liable to the suspicion of intercourse with Chamars. They claim for themselves the designation Chaun-har-Gaur, from a Raja named Chaun-har, or sometimes Chiman-Gaur, from a Muni called Chiman.—*Wilson*.

CHAMARI. MAHR. *Premna integrifolia*.

CHAMAR IENA, Jaina caves near Nasik.

CHAMATEE-PATEE. BENG. *Papyrus dehiscent*.

CHAMAYEN, a small section of the Gujar tribe in Panipat Bangar.—*Wilson*.

CHAMB. HIND. Land that receives the drainage of higher lands, generally a heavy blackish clay.

CHAMBA is a state in the Himalaya ruled by a Rajput dynasty. It is within the government of the Panjab. It lies north of the Kangra district, between lat. 32° 10' 30" and 33° 13' N., and long. 75° 49' and 77° 3' 30" E., with an area of

3216 square miles, and a population of 140,000, composed of Rajputs and Gaddi. The district includes the mountain valleys of all the sources of the Ravi, and a portion of the upper valley of the Chenab, between Lahul and Kishtwar. It has Kulu on its east; in the N.W. it is separated from Jamu by a chain of mountains, through which the Padri pass leads from Jamu to Chamba, elevated 11,000 feet. The Sach pass, elevated 14,800 feet, leads over the range in the north, dividing Chamba from Kishtwar. In 1847 a sunnud was given to Raja Siree Singh, assigning the Chamba territory to him and to his male heirs. In 1854 the sanatorium of Dalhousie, in the Chamba territory, was made over to the British by the raja, and a sunnud was given to the raja conferring on him the right of adoption. Its ancient capital was Varnapura, or Barmawar, on the Budhil river, where many fine temples, and a brazen bull of life size, still exist to attest the wealth and piety of its early rulers.—*Cunningham, Ancient Geo. of India*, p. 141; *Aitcheson's Treaties*; *Hooker f. et Th.* p. 204.

CHAMBA, an idol of the Tibetans.

CHAMBA. HIND. *Michelia champaca*; also *Prinsepia utilis*, *Jasminum grandiflorum*, and *J. officinale*.

CHAMBA-GADDI, a race who occupy the Kangra valley, near the Chamba range of hills. They call themselves Rajputs, and may always be known by their peculiar conical caps, with lappets to turn down over their ears, like an English travelling cap. They are shorter and stouter and stronger than their neighbours, are sharp and able, and impose upon their less knowing neighbours. Most of the witch-finders are Chamba-gaddi. When Europeans first visited the Kangra valley, they would drink or eat from their hands, and had very slight notions of caste, but since their intercourse with the people of the plain they have become as bigoted as any Hindus.

CHAMBAL. MALAY. *Chavica seriboo*.

CHAMBAL, a tributary of the river Jumna (Jamuna), which it joins 40 miles below Etawa town as a great river. It rises in Malwa about eight or nine miles S.W. of the cantonment of Mhow, 2019 feet above the sea.—*Imperial Gazetteer*.

CHAMBAL. HIND. *Ranunculus arvensis*.

CHAMBATT. HIND. *Kæmpferia rotunda*.

CHAMBELI. HIND. *Jasminum grandiflorum*.

CHAMBOGUM. TAM. The most beautiful tree in appearance on the coast of Malabar; it has a very close-grained wood, and throws out rather a pleasant smell when cut. It is generally found in the forests of Travancore of about 18 inches in diameter, and from 20 to 25 feet long. It produces a small round fruit, which the natives use medicinally.—*Edge, M. and C.*

CHAMBOOLEE. DUKH. *Bauhinia Vahl.*

CHAMBRA. HIND. *Artemisia Indica*.

CHAMELEON, a genus of a family of reptiles of the section Squamata and order Sauria. There is but one genus, the Chameleo, or chameleon, the thusemeth of the Hebrews, of which there is one species in India, *C. Zeylanicus*, *Lour.*, of Ceylon and India. There are twenty-one in Madagascar, *bifurcus*, *cucullatus*, *nasutus*, *Parsonii*, *rhinocerotus*, and *verrucosus*; *C. tiaris* occurs in the Seychelles, and *C. pardalis* in Bourbon. The E. Indian species, *C. Zeylanicus*, has many synonyms.

CHAM GADILL. BENG. *Cynopterus marginatus*, *Jerdon*.

CHAM HARAIL. TIBETO-CHINESE. A sacred dance of the Buddhists; a masquerade of Hindu gods going in procession, after a model employed at Yung-ho-Kung in Peking; it lasts two days.—*Edken*.

CHAMI. TEL. *Premna spicigera*, *Linn.*

CHAMIARI. HIND. *Prunus puddum*.

CHAMKAT. HIND. *Desmodium tiliaefolium*.

CHAMKHARAK. HIND. *Carpinus viminea*.

CHAMLOO, one of the seven Kazzilbash tribes. See Kazzilbash.

CHAMMA. TEL. *Canavalia gladiata*.

CHAMMA. HIND. *Salix alba*.

CHAMMARI. PERS. A grateful dish, made by boiling dried apricots to a consistence, with butter, seasoned with spices.—*Mason*, ii. p. 69.

CHAMNO, Khem, and Renpu, three Assyrian deities of Semitic extraction. See Ken.

CHAMOIS LEATHER.

Chamois, . . . FR. Camoscio, . . . IT. Samischleder, . . . GER. Semschanui, Koshi, RUS.

A prepared skin of the chamois, or of the common goat, kid, or sheep. It is of a yellow colour, soft and pliant, and used for cleaning silver plate.

CHAMOMILE, *Anthemis nobilis*.

Babunuj, . . . ARAB. Babune phul, . . . HIND. Kan-kiuh-hwa, . . . CHIN. . . gao, . . . PERS. Ku-kiuh-hwa, . . . CHAMENDAPU, . . . TAM.

The flowers of the *Anthemis nobilis*. An aromatic herb, leaves used in garnishing; the flowers infused as bitters, and in fomentations. Of easy culture, raised from seed; held in estimation both in domestic and scientific medicine.

CHA-MORERI, a lake in Ladakh, 15 miles long and 2½ miles broad, 15,000 feet above the sea. It is surrounded by mountains, some of which rise to 5000 feet from the water's edge.

CHAMPA, a province in the peninsula of Cambodia. Before its subjugation by the Cochinchinese, it was a considerable state, under a chief, who lived at Phanrye, lat. 11° 10' N. In the 15th century an intercourse subsisted with the Malays and Javanese, and about the middle of the 15th century the queen of the principal sovereign of Java was a Champa princess. The people are called Loye or Loi in the Anam language, and profess a kind of Hinduism resembling the worship of Buddha or the Jains. Tradition ascribes to ancient Champa sovereignty over all the neighbouring kingdoms to the frontiers of Pegu and China.—*Monhot's Travels*, i. 223; *Yule, Cathay*, i. p. 104; *Crawford, Embassy to Siam*; *Dict. Ind. Islands*.

CHAMPA, also Champaka. HIND. *Michelia champaca*. The flower is one of five with which the Hindu Kama, the god of love, ornaments his arrow. When Vasant'ha, the personified spring-time, is preparing the bow and shafts for his friend,

'He bends the luscious cane, and twists the string
With bees, how sweet! but oh! how keen their sting!
He with five flowerets tips the ruthless darts,
Which through five senses strikes enraptured hearts
Strong Champa, rich in odorous gold;
Warm Anier, nursed in heavenly mould;
Dry Nag-Kesur, in silver smiling;
Hot Kittikum, our sense beguiling;
And last, to kindle fierce the scorching flame,
Love-shaft which gods bright Bela name.'

CHAMPA CHASTI, a Hindu festival in the west of India, held about the 2d December, on the 6th of Margha shirsh-shud. It is held wherever there is a shrine of Kandoba, as at Jijuri in the Dekhan.

CHAMPAGNE, a deservedly-esteemed wine, named from the province of France producing it. There are two distinct classes of this wine, viz. white and red, each either still or sparkling; but there is a great variety in the flavour of the produce of different vineyards.

CHAMPAH, a tree which grows on the summit of the lofty hills north of Khatmandu; measures in girth 11 feet.—*Smith's Nepal*.

CHAMPA-KALI. HIND. Necklace.

CHAMPA KUIA. BENG. Musa sapientum.

CHAMPA-NUTEYA (var. Lal). BENG. Amaranthus polygamus, Linn.

CHAMPARAN, a district in Bengal, bounded on the north by Nepal, and at its side are the Gandak and the Bagmati rivers. Population in 1872, 1,440,815 souls, viz. 974,451 Hindus, 199,237 Mahomedans, 21,450 Tharu. The aborigines numbered 31,203 souls. The Tharu are an honest, industrious, Indo-Chinese race, inhabiting the malarious Terai. They utilize the hill streams for rice culture. The Maghya Dom, about 800 souls, are a nomade tribe, inveterate thieves; the Dosadh are 69,958, and the Chamar 89,061. The Hindu and other races are—

Brahman,	65,315	Kurmi,	77,641
Babhan or military		Nuniya,	35,102
Brahmans,	49,288	Artisan,	141,140
Rajputs,	69,578	Fishing boatmen, . .	62,757
Goala,	133,413	Mahomedans, . . .	199,237
Kocri,	82,074		

The Bettia raja is a Babhan. The Nuniya are salt-makers.—*Imp. Gaz.*

CHAMPA-ZARD-RANG. HIND. Amongst dyers, a yellow colour like the champa flower.

CHAMPHUNG, a rude tribe in Munnipur, of about 30 or 40 families, near the source of the Irawadi. See India.

CHAMPIRI KATTA. TEL. Broom grass.

CHAMPILOONG. MALAY. A timber tree of the Archipelago, used as a furniture material at Bawean.

CHAMPU, in Hindu literature, a style of composition, a mixture of prose and verse.—*Ward*, iv.

CHAMRA. HIND. Skins, hides, leather, parchment.

CHAMRESHI, also Sunbar. HIND. Rhododendron campanulatum.

CHAMROK. HIND. Ehretia aspera.

CHAMULI. HIND. Michelia champaca.

CHAMUNA. HIND. The edible bulbs of Cyperus bulbosus and allied species.

CHAMUNDA, in Hindu mythology, as related in the Durga Mahatmya, an emanation of the goddess Durga, springing from her forehead to encounter the demons Chanda and Munda, detached to seize Durga by the sovereign of the Daitya. Sumbha having slain the demons, she bore their heads to her parent goddess, who told her that, having slain Chanda and Munda, she should thenceforth be known on earth as Chamunda. She is also termed Kali from her black colour, and Karala or Karalavadana from her hideous countenance (Hind. Theat. ii. p. 57). It is to this goddess that all human sacrifices are made by Hindus. One of the ancient Hindu dramatists,

Bhava Bhutta, who flourished in the 8th century, in his drama of Malati and Madhava, has made powerful use of the Aghora in a scene in the temple of Chamunda, where the heroine of the play is decoyed in order to be sacrificed to the dread goddess Chamunda or Kali. The disciple of Aghora Ghanta, the high priest who is to perform the horrible rite, by name Kalapa Kundala, is interrupted in his invocation to Chamunda by the hero Madhava, who thus describes the scene (Act V. scene 1):—

'Now wake the terrors of the place, beset
With crowding and malignant fiends. The flames
From funeral pyres scarce lend their sullen light,
Clogged with their fleshly prey, to dissipate
The fearful gloom that hems them round.
Well, be it so. I seek, and must address them.

How the noise,
High, shrill, and indistinct, of chattering sprites,
Communicative, fills the charnel ground.
Strange forms, like foxes, flit across the sky;
From the red hair of their lank bodies darts
The meteor blaze, or from their mouths that stretch
From ear to ear, thick-set with numerous fangs,
Or eyes, or beards, or brows, the radiance streams.
And now I see the goblin host: each stalks
On legs like palm-trees, a gaunt skeleton,
Whose fleshless bones are bound by starting sinowa,
And scantily cased in black and shrivelled skin,
Like tall and withered trees by lightning scathed,
They move, and as amidst their sapless trunks
The mighty serpent curls, so in each mouth,
Wide yawning, lolls the vast blood-dripping tongue.
They mark my coming, and the half-chewed morsel
Falls to the howling wolf;—and now they fly.'

The belief in the horrible practices of the Aghori priesthood is thus proved to have existed at a very remote period, and doubtless refers to those more ancient and revolting rites which belonged to the aboriginal superstitions of India, antecedent to the Aryan-Hindu invasion and conquest of the country. The worshippers of Sakti of Siva, under the terrific forms of Chamunda, Chinnamustaka, and Kali, are called Kerari, and represent the Aghora Ghanta and Kapalika. The word Chamunda, according to Ward, is from Charu, good, and Munda, a head. She is said to be identical with the goddess Randi.—*The People of India*, by J. P. Watson and John William Kaye; London, Asiatic Researches, ix. p. 203.

CHAMUNDIBETTA, or hill of Chamundi, is a precipitous hill 2 miles S.E. of the fort of Mysore. It is 3489 feet above the sea. There is on its summit a temple at which human sacrifices were made until the time of Hyder Ali. Half-way up the flight of stairs is a well-executed colossal figure of Nandi in a recumbent attitude, hewn out of the solid rock.—*Imp. Gaz.*

CHAMUTI. HIND. Michelia champaca. Tulipa stellata.

CHAMY. CAN. Panicum miliaceum.

CHAMYARI. HIND. Of Marree hills, Cornus pudum, Prunus pudum; bird cherry.

CHANA, also Chanaka. HIND. Cicer arietinum; also species of Vicia.

CHANAKYA, a Brahman of the city of Takasila, who lived B.C. 330, the early friend and subsequent counsellor of Chandragupta. The drama of Mudra Rakshasa, attributed to Visakhadatta, is founded on the story of Chanakya, who is celebrated as a statesman and writer on politics. It was he who plotted against Mahapadma, the last of the Nanda dynasty, and placed Chandra-

gupta on the throne. His name is also written Chanaki, and he is called Kantilya.

CHANAKYA SLOKA, moral couplets from the ancient Sanskrit books, taught to Hindu boys in the village schools. Dr. Haeblerlin, an erudite German long resident in Bengal, printed a collection of these Chanakya couplets. Several were very pretty; some were original and quaint; and a few were positively indecent.

CHANAMBU-PARATI, the Maleala name of a servile caste in Anjengo, employed apparently as domestic servants.—*Wilson*.

CHANAMIA. HIND. A tribe of Chandrabansi Rajputs in Jonpur and Gorakhpur.—*Wilson*.

CHANAMU. BENG. *Crotalaria juncea*.

CHANAN. MALEAL. A tribe who extract the sap from the palmyra tree.—*Wilson*. Plural, Shanar.

CHANAPPAN. TAM., MAL. A weaver of coarse cloth for sacks, of hempen cords, from Sana, hemp.—*Wilson*.

CHANAR. HIND. *Platanus orientalis*.

CHANARPISI resembles the game of Pachisi, but is more simple and more easily learned. For chanarpisi the board is divided into 25 squares.—*Burton's Scinde*, p. 294.

CHANAURI. HIND. *Aralia Cuchemirica*.

CHANAY KALANGU. MALEAL. *Tacca pinnatifida*.

CHANCHALI KURA. TEL. *Achyranthes alternifolia*, R. i. 674; *Digera muricata*, Mart.

CHANCHARU. KAN. According to Wilson, a savage tribe tenanting the forests in the south of India. Probably the Chanchawar, Chansuar, or Chanchor is intended.

CHAN-CHOW. CHIN. *Dioscorea batatas*.

CHANCHY KOLI, a Koli race from Junaghur in Kattyawar, settled as farmers in Bombay.

CHANCIO. GUJ. A tribe inhabiting Gujerat, Kach, and Sind, and wearing a large long pointed turban; a pirate, a sea-robber.—*Wilson*.

CHAND. HIND. The moon. Chandni, silver, moonshine, an awning. Chandni chowk, the market-place.—*W*.

CHAND, a famed heroic Hindu poet of India; author of the Prithivi Raj Chohan Rasa, containing an account of the Prithivi Raja, a Chauhan Rajput, the last Hindu prince of Delhi. It has many books, of which the Khanouj Khand contains the history of Sanjogata Jyo-Chand, who celebrated the Aswa Medha sacrifice in token of assumption of empire. It is written in an archaic form of Hindu. See Jyo-Chand; Prithivi; Sanjogata.

CHANDA, a district in the Nagpur division of the Central Provinces, lying between lat. 19° 7' and 20° 51' N., and long. 78° 51' and 80° 51' E., 120 miles long and 130 broad, with an area about 9700 square miles. The siege and storm of Chanda occurred 20th May 1818. The Wainganga flows through its centre. Chanda is two miles to the north of the Warda river; the mean height of the plain surrounding the town is 761 feet. The level of the Godavery is 525 feet; and coal has been found in its vicinity in abundance. The deposit at Chanda occupies 150 square miles. In Chanda and Berar, the beds in the group of rocks in which the coal occurs (known to Indian geologists as the Barakur group), exhibit very great variation both in thickness and quality within short distances. They are often of great

thickness locally, but thin out and nearly disappear. The population in 1872 was 534,431:—

Gond,	91,438	Manna,	24,937
Brahmans,	5,963	Mali,	24,995
Kunbi,	81,902	Teli,	25,537

with Kandh, Kurku, Maria, Baiga. The Gonds dwell chiefly east of the Wainganga and the Pranhita, the Telings along the east centre and south, and the Mahrattas in the northern and western parganas west of the Wainganga. The races of the Chanda district that are believed to be aboriginal are—(1) The Gond, Pardhan, and Halba, of the Gond type; (2) Kohri and Mana, of the Kohri type. The first are famous for the construction of tanks, the second as agriculturists. (3) The Golkar and Gowari, of the Gaudi type.

CHANDA. HIND. *Convolvulus Diamæ*.

CHANDABUNGA, a Santal deity.

CHANDAL. HIND. *Antiaris innoxia*.

CHANDALA. HIND. In Hinduism, any low caste man. The word is Sanskrit from Chanda, furious, and Ala, to go. According to Dr. Hunter, the Chandala were of the same stock, and formed their name from the same root, as the aboriginal races of Northern India at the present day. The Chandala, as their personal appearance, habits, and occupations are described by ancient writers, were evidently a prior race, who before the advance of the Aryans had been reduced by the non-Aryans into a helot people, and have long since merged as serfs into the Hindu population. The whole nomenclature of the helot castes among the mixed Hindus, both in ancient and modern times, is derived, he says, from the aborigines; thus he indicates the Mali, gardeners and landless husbandmen, who take their name from the tribal term Mali, man. The Dom, Dam, and Duni; the Kharwar, the Kheroar, or ancient Santal, and the present Kheria of Central India. The Chaura serfs of the Panjab, descendants of the Chaura military out-castes of the Mahabharata. The Cooleo or Kuli all over India, and the Hadi, a helot race of Bengal. In Apastamba we find no mention of the mixed castes which come so prominently forward in the Institutes of Menu. The Chandalas and other out-castes who have become degraded by crime are mentioned, and it is declared to be sinful to touch, speak, or look at them. In Gautama's Sutras, intercourse between the castes is recognised, and a name and status allotted to the offspring. Gautama therefore stands between Apastamba and Menu. Chandalia is a tribe of the Bhangi, who might also be termed Chandala.

CHANDAN. HIND. *Juniperus excelsa*, J. arborea; pencil cedar; Dhupri of Kamaon.

CHANDANA. HIND. Sandal-wood. *Santalum album*, *Lin.*; in Telugu, Chandanapu chettu. This is the white or true sandal, which grows in Mysore and Canara; the Rakta Chandana is the red sanders wood (*Pterocarpus santalinus*). The Santalum (or Syrium) myrtifolium grows in the Northern Circars, which Dr. Roxburgh considered a strongly-marked variety of the Malabar sandal-tree. The attractive nature of the sandal-tree is described in the sloka, 'Round the stem of the Chandana dwell serpents, on its top birds, on its branches monkeys, on its flowers bees,—so the riches of a good man are beneficial to all.'—*Fl. Ind.* ii. 454; *Hind. Theat.* ii. p. 96.

CHANDANAVATA, an ancient name of Baroda.

CHANDANA-VIBHUTI. See Tripundra.

CHANDANAYATRA or Chandanotsava. SANSK. The ceremony of offering sandal paste or other perfume to an idol.—*Wilson*.

CHIANDA-NAYIKA. SANSK. From Chanda, furious, and Nayika, a female attendant on Durga. CHANDAN-HAR, also Chandarmah, and Chand-bina, HIND., are articles of female jewellery.

CHANDARNAGAR or Chandernagore, a French settlement on the banks of the Hoogly river, in lat. 22° 50' 40" N., and long. 88° 24' 50" E. Its population in 1877 was 22,539. It was reduced by the fire from the ships of Admiral Watson on the 23d March 1757, while then under the governorship of M. Law. The place became a French settlement in 1673.

CHANDA SAHIB, a relative and son-in-law of Ali Dost. In the early part of the 18th century, from 1732 till his death in 1752, he threw himself, on the support of the French under Dupleix, against the British and Muhammad Ali. He was an able leader, and, when occupying Seringham, Law, anxious for his safety, treated with Monaji for his escape; but Monaji, on getting possession of Chanda Sahib, kept him prisoner for several years in the fort of Tanjore, and ultimately put him to death. He was humane, generous, and brave.

CHAND BIBI, also known as Chand Sultana, wife of Ali Adal Shah of Bijapur, one of the most distinguished women that have ever appeared in India. When the emperor Akbar sent an expedition into the Dekhan, there were four parties in the field supporting claimants to the throne of Ahmadnagpur, and this princess was acting as regent for her infant nephew, Bahadur Nizam Shah. She appealed successfully to the belligerents to unite against the Moghuls. Nehang, an Abyssinian, cut his way into Ahmadnagpur while the Moghuls were in the act of investing the place, and the other two joined the Bijapur army then marching against the Moghuls. Prince Murad pressed the siege; two mines were rendered useless by the countermines of the besieged; a third mine created a wide breach, and Chand Bibi rushed to defend it, in full armour, and a naked sword in her hand, and a veil over her face, and, after an obstinate continuance of the assault, the Moghuls withdrew in the evening, and they were afterwards bought off with the cession of Berar (February 1596, A.H. 1004). The Moghuls had not long withdrawn, when Muhammad Khan, whom Chand Bibi had appointed her prime minister, plotted against her authority, and called in the aid of Prince Murad. An indecisive battle was fought on the banks of the Godavery, and Akbar sent Abul Fazl, and subsequently he himself left the Panjab in 1598, and reached the Dekhan before the middle of 1599, and sent forward Prince Danial and the Khan-i-Khanan to invest Ahmadnagpur; and Chand Bibi was negotiating a peace with them, when her mutinous soldiery burst into the female apartments, and put her to death. In a few days the Moghuls stormed the fort, and gave no quarter to the fighting men. Chand Bibi is the favourite heroine of the Dekhan, and is the subject of many fabulous stories, which even Khafi Khan and Kazi Shahab-ud-Din perpetuate.—*Elphin*, pp. 459-460.

CHANDEL, a Rajput tribe spread through the N.W. Provinces. They have many divisions,

and are supposed to have come from Muhoba in Bundelkhand. They claim to be of the Lunar race, and they give their name to the Chandeli or Chanderi district. There are four subdivisions of them in the Lower Doab, who suffix to their names the regal terms Rao, Rawat, Rao, and Rana.—*Elliot*; *Wh. II. of I.*

CHANDELI. HIND. A very fine cotton fabric made at Chanderi, on the left bank of the Betwa, from the cotton of Amraoti. Great care is bestowed in the preparation of the thread, which is prepared so fine as even to sell for its weight in silver. The weavers work in a dark underground room, of which the walls are kept damp to prevent dust flying about.—*Elliot*.

CHANDESWARA, who lived about A.D. 1314, is the author of the law-book Vivada Ratnakara.

CHANDESWARI, in the Tamil country, the prototype of Durga or Kali.

CHANDI, the last day of the month Asoj, ushers in the Hindu winter (sard rit). On this day nothing but white vestments and silver (chandi) ornaments are worn, in honour of Chandra, who gives his name to the

'Pale and common drudge
'Tween man and man.'

An intercalary month is the mode followed by Hindus to adjust the annual seasons, their ordinary calculations being by lunar months, and such are called lunar. On the Asoj there is a procession of all the Rajput chiefs to the Chougan, and on their return a full court is held in the great hall, which breaks up with 'obedience to the lamp' (jote ka moojra), whose light each reverences. When the candles are lit at home on this day, every Rajput, from the prince to the owner of a 'skin (charsa) of land,' seated on a white linen cloth, should worship his tutelary divinity, and feed the priests with sugar and milk.—*Tod's Rajasthan*.

CHANDIA, a Baluch tribe, some of whom are found in the Delhra Ghazi Ghan district.—*MacG.*

CHANDI-MANDAPA, chapels in private dwellings in Bengal. Chapels face either the west or the south, never the east nor the north.

CHANDIPAT or Chandipatha, also called Devi-Mahatmya, a Sanskrit poem of 700 verses, forming an episode of the Markandeya Purana. It celebrates Durga's victories over the Asuras, and is daily read in the temples of that goddess. Chanda was a name of the goddess Durga.—*Dowson*.

CHANDIA. HIND. A small wafer-shaped gold or silver ornament worn by Hindu women on the forehead between the eyes; also the painted mark made by women on their forehead. The Ratnamala says, 'Dressed in sixteen garments, a woman without a Chandia does not appear beautiful.'

CHANDNEE. HIND. Calonyction Roxburghii.

CHANDNEY CHOWK, or Silver Street of Delhi, is a name that has become common to the principal avenue in all the great cities of Northern India. In Calcutta, however, the street of that name is not inhabited by bankers or goldsmiths, but by stable-keepers.—*Tr. of Hind.* ii. p. 278.

CHANDNI. HIND. Silver; a white cloth spread on a carpet; a canopy.

CHANDNI, or Chandi. HIND. The practice amongst Brahmans, Charans, and others, of

wounding or killing themselves, in order to extort alms or payment.—*Wilson*. See Chandri.

CHANDO, a caste of toddy-drawers in Ceylon.

CHANDOO, the extract of opium which is employed in opium-smoking, called by the Chinese Yen-kau and Shuh-yen. The opium, as exported from Calcutta, is in boxes containing forty balls, each of the size of a 32 lb. cannon shot. These balls are enclosed in a husk of compressed poppy leaves, and contain a certain quantity of moist opium inside, but which in this state is unfit for smoking, for which it is prepared by four processes, in the following manner:—About three or four o'clock in the morning, fires are lighted, and, as the first process, a ball is divided into two equal halves by one man, who scoops out with his fingers the soft part inside, and throws it into an earthen dish; frequently during the operation moistening and washing his hands in another vessel, the water of which is carefully preserved, into which also is thrown the hardened poppy leaf husks, when all the removable opium is obtained.

In the second operation, the husks are boiled until all their adhering opium is dissolved, strained through a double filter of cloth and China paper. The strained fluids are then mixed with the opium that was scooped out in the first operation, and boiled down in a large iron pot to the consistence of treacle. The refuse is dried and sold to Chinese, who adulterate good opium with it; and the filter paper is used by the Chinese as an external application in affections of the lower bowels.

In the third operation, the dissolved treacle-like mass is scethed over a charcoal fire, strong and steady but not fierce temperature, during which it is worked, spread out, and again and again worked up to expel the water, but prevent it burning. When brought to the proper consistence, it is divided into half-a-dozen lots, each of which is spread like a plaster on a nearly flat iron pot, to the depth of from half to three-quarters of an inch, and then scored in all directions to allow the equal application of heat. One pot after another is then placed over the fire, turned rapidly round, and then reversed, so as to expose the opium itself to the full heat of the red fire. This is repeated three times, the time and proper heat being judged by the workman from the aroma and colour. In this part of the process the greatest delicacy is demanded, for a little too or less fire would destroy the morning's work, or 300 or more dollars' worth of opium. The head workmen in Singapore are men who have learned their trade in China, and from their great experience are paid very high wages.

The fourth operation consists in re-dissolving this first opium in a large quantity of water, and boiling it in copper vessels till it be reduced to the consistence of the chandoo of the shops, the degree of tenacity being the index of its complete preparation, which is judged of by drawing it out by slips of bamboo. The quantity of chandoo obtained from the soft opium is about 75 per cent. But from the gross opium, that is, including the opium and the bark, the proportion is not more than from 50 to 64 per cent.

In this lengthened scething process, the chandoo or extract becomes less irritating and more soporific, the vegetable matter, the resin and oil,

the extractive matter, being all thrown out in the refuse matter.—*J. I. A.* No. 1, Jan. 1848; *Dr. Little; Cameron*, pp. 215, 216.

CHANDO-OMAL, or moon goddess. (Qu. *Chando Ammal*.)

CHANDPUR, the name of many towns in India.

CHANDPUR SAKUMBARI of Tandia are described by Col. Tod as desperate robbers. He saw this place fired and levelled in 1807, when the noted Karim, Pindari, was made prisoner by Sindia. It afterwards cost some British blood in 1817. Though now desolate, the walls of this fortress attest its antiquity, and it is a work that could not now be undertaken. The remains of it bring to mind those of Volterra or Cortana and other ancient cities of Tuscany,—enormous squared masses of stone, without any cement.—*Tod's Rajasthan*, i. p. 100.

CHANDRA. TEL. *Acacia sundra*; *Machilus odoratissimus*? and *Tetranthera Roxburghii*. BENG., *Ophioxylon serpentinum*, *L.*

CHANDRA. SANSK. The moon, from *Chad*, to shine. This is a frequent affix to names, as *Chandra-Prabhu*, shining lord; *Chandra-Raya*, shining ruler; *Chandra-Shekhara*, shining mountain peak, a name of Siva. See *Amas*; *Chand*; *Graha*; *Haft Dhat*; *Uma*.

CHANDRA, a son of Atri, and father of Budha by Tara. Tara was the wife of his teacher Vrihaspati.

CHANDRA, in Hindu mythology, the moon. Moor tells us it is usually a male deity; sometimes, however, feminine, *Chandri*, and in such character is more commonly applied to *Parvati* or *Devi*, the consort or *Sacti* of *Siva*, than to any other goddess. *Lakshmi Devi*, or simply *Devi*, as the consort of *Vishnu* is often called, occasionally coalesces with *Parvati*; and both, as well as *Saraswati*, spouse of *Brahma*, may be identified with the moon or *Luna*. Thus, in Hindu mythology, the sun and moon, being sometimes regarded as male deities, the three principal female divinities hold a similar union with their respective solar lords. According to *Coleman*, *Chandra* or *Soma*, the moon, is described as the male, and is painted young, beautiful, and of dazzling fairness, two-armed, and having in his hands a club and a lotus. He is usually riding on or in a cart drawn by an antelope. The moon is occasionally represented as *Chandri*, a female, in which character being visited by *Surya*, she produced a numerous family called *Palinda*. In the third volume of the *Asiatic Researches*, this sexual change is accounted for by *Colonel Wilford*, who says, when the moon is in opposition to the sun, it is the god *Chandra*, but when in conjunction with it, the goddess *Chandri*, who is in that state feigned to have produced the *Palinda*. The moon was also worshipped as male and female, *Lunus* and *Luna*, by the Egyptians, the men sacrificing to it as *Luna*, the women as *Lunus*; and each sex on these occasions assuming the dress of the other. The Hindus have in their zodiac twenty-seven lunar mansions, called *Nakshatra*, or daily positions of the moon; and as to perfect the revolutions some odd hours are required, they have added another not included in the regular chart. These twenty-eight diurnal mansions form the zodiac, having been invented by *Daksha*; are personified as the daughters of the deity, and are the mythological wives of *Chandra*. In the chart of the

lunar mansions they are curiously represented as a horse's head, a yoni, razor, an arrow, a wheel, a bedstead, a house, etc. The Dii Majores of the Rajput are the same in number and title as amongst the Greeks and Romans, being the deities who figuratively preside over the planetary system. Their grades of bliss are therefore in unison with the eccentricity of orbit of the planet named. On this account Chandra or Indu, the moon, being a mere satellite of Ella, the earth, though probably originating the name of the Indu race, is inferior in the scale of blissful abodes to that of his son Budha or Mercury, whose heliacal appearance gave him importance even with the sons of Vaiva, the sun.—*Cole, Myth. Hind.* p. 131.

CHANDRA-BHAGA, a river formed by the junction of the Chandra and the Bhaga, and is then styled the Chenab river, the Ascesines of the Greeks. In the parts of Ladakh through which the Chandra and Bhaga rivers run, on their banks the people are Bhot up to their junction; after that, Hindu. See Ladakh.

CHANDRA BHUNDA, a tribe employed in the Sunderbuns in the manufacture of salt.

CHANDRAGIRI, a town and taluk in the North Arcot district, near Madras, where the rajas of Vijayanagar resided after the defeat at Talikot, and where, in 1640, was signed the treaty granting to the E. I. Company the site for Fort St. George, Madras.—*Imp. Gaz.*

CHANDRA GOPAL PAI, commonly called Gopal Bhar, was the principal humorist at the court of Krishna. He was a Kūmar or potter by caste, and was a native of Nadiya. Some say he was a Najit, or of the barber caste. He was fond of music, and patronised musicians and khawaths of the Upper Provinces. He delighted in dhurpāds and kheāls, and was a great connoisseur in matters regarding the rāgs and raginis regulating oriental music. He was a great encourager of architecture. He constructed the large building for puja in the Rajbari. It is of Gothic style of architecture, and is considered a splendid dalan. He also built a marble staircase for going down the sacred well Gyan Bapi, in Benares, for the benefit of the pilgrims. He was universally considered the head of Hindu society, and was the arbitrator on all questions of caste.—*Calcutta Review*, No. 109, p. 110.

CHANDRAGUPTA, the Sandracottus or Sandracoptus of the Greeks, the founder of the Mauryan dynasty of Magadha. He was the illegitimate son of the last Nanda, by the beautiful but low caste Mura, from whom he obtained the designation of Maurya. In the Mudra Rakshasa, a Sanskrit drama detailing his elevation, Chandragupta is, however, frequently named Vrishala, a term said to be equivalent to Sudra; and as Nanda himself was the son of a Sudra woman, there can be little doubt that the celebrated Maurya family were of Sudra extraction. In the early part of his career, Chandragupta led a wandering life in the Panjab (see Tournour, Introduction to the Mahawanso, p. 41, quoting the Tika or Commentary), and was probably engaged with his fellow-countrymen in opposing Alexander. His chief adviser, the Brahman Chanakya, was a native of Takshasila or Taxila, the capital of the Western Panjab; and it was in that country that Chandragupta first established himself by the complete expulsion of the Greek troops left by

Alexander (Justin. xv. 4: 'Auctor libertatis Sandrocottus fuerat'). It would appear that the Greek colonists in the Panjab had first been placed under Philip, while the civil administration of the country remained in the hands of its native princes, Taxiles and Porus. Afterwards, on the murder of Philip by the mercenary soldiers, Alexander (Anabasis, vi. 2, vii.) directed Eudemos and Taxiles to govern the country until he should send another deputy. It is probable, however, that they continued to retain the charge; for, after Alexander's death in B.C. 323, Eudemos contrived, by the treacherous assassination of king Porus by his general Eumenes, to make himself master of the country (Diodorus, xix. 5). Some few years later, in B.C. 317, he marched to the assistance of Eumenes with 3000 infantry and 5000 cavalry, and no less than 120 elephants. With this force he performed good service at the battle of Gabiene. But his continued absence gave the Indians an opportunity not to be neglected, and their liberty was fully asserted by the expulsion of the Greek troops and the slaughter of their chiefs (Justin. xv. 4: 'Præfactos ejus occiderat'; again, 'Molienti deinde bellum adversus præfactos Alexandri'). Chandragupta was present when Porus was murdered. He afterwards became the leader of the national movement, which ended in his own elevation to the sovereignty of the Panjab. Justin attributes his success to the assistance of banditti (Justin. xv. 4: 'Contractis latronibus Indos ad novitatem regni sollicitavit'). But in this Colonel Cunningham thinks he has been misled by a very natural mistake; for the Aratta, who were the dominant people of the Eastern Panjab, are never mentioned in the Mahabharata without being called robbers (Lassen, *Pentapot Indica*: 'Aratti profecto latrones,' and 'Bahici latrones'). The Sanskrit name is Arashtra, the kingless, which is preserved in the Adraistæ of Arrian, who places them on the Ravi. They were the republican defenders of Sangala or Sakala, a fact which points to their Sanskrit name of Arashtra, or kingless. But though their power was then confined to the eastern Panjab, the people themselves had once spread over the whole country: 'Ubi fluvii illi quivi . . . ibi sedes sunt Arattorum.'—*Lassen, Pentapot Indica, from the Mahabharat*. They were known by the several names of Bahika, Jarttika, and Takha; of which the last would appear to have been their true appellation, for their old capital of Taxila or Takka-sila was known to the Greeks of Alexander; and the people themselves still exist in considerable numbers in the Panjab hills. The ancient extent of their power is proved by the present prevalence of their alphabetical characters, which, under the name of Takri or Takni, are now used by all the Hindus of Kashmir and the northern mountains, from Simla and Sabathu to Kābul and Bamian. On these grounds, Major Cunningham identifies the banditti of Justin with the Takka, or original inhabitants of the Panjab, and assigns to them the honour of delivering their native land from the thralldom of a foreign yoke. This event occurred most probably about 316 B.C., or shortly after the march of Eudemos to the assistance of Eumenes. It was followed immediately by the conquest of Gangetic India (Justin. xv. 4), and in 316 B.C. the rule of Chandragupta was acknowledged over the whole northern Peninsula, from

the Indus to the mouth of the Ganges. Authorities differ as to the length of Chandragupta's reign. The Mahawanso gives 34 years; the Dipawanso and the Vayu Purana give only 24 years. This difference may perhaps have originated in two distinct reckonings of the date of his accession, the one party counting from the death of Nanda Mahapadma, in B.C. 325, and the other party from the conquest of India, in B.C. 315. Some assumption of this kind is clearly necessary to reconcile the different authorities, unless, indeed, we take the only alternative, of adopting the one and of rejecting the other. At this period the capital of India was Pataliputra or Palibrotha, which was situated on the Ganges, at the junction of the Erranaboas or Alaos river. The former name has been identified with the Sanskrit Hiranyabahu, an epithet which has been applied both to the Gandak and to the Sone. The latter name can only refer to the Hi-le-an of the Chinese travellers, which was to the north of the Ganges, and was there undoubtedly the Gandak. Indeed, this river still joins the Ganges immediately opposite to Patna, that is, the city, or metropolis, as its proper name (Patna) implies; the junction of the Sone is some nine or ten miles above Patna. But as there is good reason for believing that the Sone once joined the Ganges at Bakipur or Bankipur, immediately above Patna, it is quite possible that the Erranaboas may have been intended for the Sone, and the Alaos for the Gandak. According to Megasthenes, Palibrotha was 80 stadia or nearly nine miles in length, and 15 stadia or one mile and two-thirds in breadth. It was surrounded with a deep ditch, and was enclosed by lofty wooden walls, pierced with loopholes for the discharge of arrows (Arrian, *Indica*, x., and Strabo, xv., both quoting Megasthenes). But when Alexander's successors were at peace with each other, the great Seleucus turned his arms towards the east, with the intention of recovering the Indian provinces of Alexander, but Chandragupta formed an alliance with Seleucus, whose daughter he received in marriage. He also received, at his court of Palibrotha, Megasthenes as an ambassador, and in return Chandragupta sent presents with an ambassador to Seleucus Nicator to Babylon. The Hindu drama *Mudra Rakshasha* records the memorable political event of his usurpation. His name occurs in an inscription at Sanchi, also on one at Ujjain. Tod says he was of the Takshak race. He died B.C. 289. His successor died B.C. 261; and Asoka, the great Buddhist sovereign, the grandson of Chandragupta, then succeeded. Asoka had murdered his brother, whose son converted him to Buddhism, and he was crowned B.C. 259-258, at Pataliputra, in the third year of his reign. Asoka engraved on rocks numerous inscriptions inculcating Buddhist doctrines, and erected, it is said, 84,000 chaitya, many of which still remain.—*Bhilsa Topes*, Cunningham, pp. 87-91, 141; *Bunsen, Egypt*, iii. 544; *Tod, Rajasthan*; *Cal. Review*; *Indische Alterthumskunde*, i. App. p. xxx., and ii. pp. 1161, 1162; *Jo. As. Soc. Ben.* p. 146; *Thomas' Prinsep*, i. pp. 61, 276; *Burgess and Ferguson*, pp. 190, 725; *Tennant's Ceylon*.

CHANDRAGUPTA, a Chauhan prince of Ajmir, grandson of Manikya Rai, who lived A.D. 695. His descendant, Pritha Rai, was the last Hindu prince who reigned at Indraprestha or Dehli.

CHANDRAGUPTA II., a king of the Gupta dynasty, who A.D. 400 made gifts to the tope at Sanchi, which are recorded on the rail of that monument.—*Fergusson*, 22.

CHANDRA KANTHA. TEL. Mirabilis jalapa, L. In Sanskrit the moonstone.

CHANDRAOTA, an ancient town at the foot of the Aravalli mountains. It was anciently the capital of the Pramara rajas, vassals of the Hindu rulers of Gujerat. Its ruins are situated about 12 miles from the foot of the Abu mountain, on the banks of the Bunass, and in a fine, well-wooded country. When Ahmad, grandson of Jaka, styled Wajah-ul-Mulk, resolved to found Ahmadabad, he chose a site occupied by a community of the Bhil race, whose predatory habits were the terror of the neighbourhood, and resolved to create his new capital by means of the city of Chandraota, the materials of which he used, and compelled all its people to follow the spoils of their temples and dwellings to the uninteresting, unhealthy, low flat on the banks of the Sabarmati. It is now only marked by mounds of ruined temples and palaces. Ahmadabad was taken by General Goddard 15th February 1780.—*Tod's Travels*, p. 134.

CHANDRA PALA, a prince mentioned on an inscription at Oomya, A.D. 1439.

CHANDRAPODA. TEL. *Argyrea speciosa*.

CHANDRASECHA, a mountain in the N.W. Himalaya. See Kali. Chandrasekhara, the moon-crested. One of Siva's many names.

CHANDRA SENA, a ruler at Ujjain about A.D. 50, who followed after Vikramaditya about 100 years. He restored the Hindu kingdom to its entirety.

CHANDRASENI KAYASTHA, a caste of clerks in Poona, who claim to be descended from a raja named Chandrasena, and therefore claim to be regarded in some degree as Kshatriya, and to be entitled to perform the ceremonies of the Vedas,—a claim not recognised by the Brahmans. There are two divisions,—the Patani Prabhu and the Dawani Prabhu. The former are found at Bombay and other towns, the latter at Goa. It is this caste whom the British call Purvoo.—*Wilson*.

CHANDRAVANSA or Indovansa, or Lunar race, a race that reigned in Antarveda and Kasi, but afterwards in Magadha (Behar) and Indraprastha (Dehli). In this dynasty are included the kings of Kasi (Benares), the line of Puru, and the line of Yadu.

Atri—Muni.

Soma—Lunus, the moon.

Budh—Mercury; married Ila, daughter of the sun.

Alias or Pururavas.

Ayu—kings of Kasi descended from him.

Nahusha—Devanahusha, Dionysos, Bacchus (Wd.).

Yayati—father of Puru and Yadu.

According to Tod, the following are synchronisms of the Solar and Lunar races:—

Budha of the Lunar race married Ila, the sister of Ikshvaku, s. l.

Harischandra, s. l., contemporary of Parasurama of Lunar line.

Sagara, cot. of Taljanga, of Parasurama.

Ambarisha, cot. of Gadhi; founded Kanouj.

In the line of Pura occurs Hastin, who built Hastinapur and Vichitravirya.

Indu, Som, Chandra, in Sanskrit mean the moon;

hence the Lunar race is termed the Chandravansa, or Induvansa, or Somavansa. They are divided into two great branches, the Yadava, who are descendants from Yadu, to which Krishna belonged, and the Paurava, who claim from Puru, to whom belonged Dushyanta with the Kuru and Pandu princes.—*Tod's Rajastan*; *Thomas' Prinsep's Indian Antiquities*; *Dowson*. See Magadha; Pandu; Rama; Surya.

CHANDRAWUT, descendants of Chandra, one of the most powerful vassal clans of Mewar. Rampura (Bhanpura) was their residence, yielding a revenue of five lakhs (£110,000), held on the tenure of service from an original grant from Rana Juggut Singh to his nephew Madhu Singh. Chandra obtained an appanage on the Chambal.—*Tod's Rajastan*, i. p. 261.

CHANDRAYANA, a Hindu penance, which consists in the sinner or devotee 'eating for a whole month no more than thrice eighty mouthfuls of wild grains, as he happens to meet with them, keeping his organs in subjection.' The reward of this is attaining the same abode as Chandra, the regent of the moon; and it absolves a Brahman from the sin of slaughtering a thousand small animals which have bones, or of boneless animals enough to fill a cart; and it is also the common penance for killing a Sudra, a Hindu of the fourth or servile class.—*Coleman*, p. 92.

CHANDRIE. HIND. Calonyction Roxburghii.

CHANDRIKA, a name of Lakshmi.

CHANDRIKI-KA-JIAR. H. Ophioxylon, sp.

CHANDUS. HIND. Cotton cloth, coloured border and ends.

CHANDWAR, of the 12th century, is the modern Firozabad. The fields around form the memorable battle-ground on which was decided the contest between the Hindu and Musalman for the sovereignty of India. The heroes Alha and Udal, two brothers, fell here; but their memory is preserved in the songs and traditions of the people, amongst the Mahoba and the Rahoires and Chandals of the Doab. The last Hindu raja, Jye-Chand of Kanouj, here closed his career by leaping into the Ganges.—*Tr. of a Hindoo*, i. p. 378.

CHANG. A deity of the Assanese, replaced in 1665 by Hinduism.

CHANG. HIND. Salix alba.

CHANG, CHIN., is a measure of 10 che, or Chinese cubits of about 14 inches each.—*Staunton's Narrative*, pp. 43, 73.

CHANG. BURM. A fortified city.

CHANG, a beer made by the Bhot race from malted barley; also the barley *Hordeum hexastichon*.

CHANGA DEVA, a Hindu devotee, whose equipage was a tiger, but other holy men have adopted the tiger as a vehicle. A pious personage of this description was reported to have visited Sri-ranga-patan (the city of Sri Ranga, or Mahadeva, commonly Seringapatam) about the year 1797, and although a Hindu, to have been hospitably invited by Tipu Sultan. He was attended by ten disciples, and declined the royal civilities, saying a tree was sufficient shelter for him. Changa Deva was of that class which pandits call Yug-saddan, or Yug-brashat, or Yug-Vyasa, who by extraordinarily pious pains obtain miraculous longevity; they prolong their

existence, it is hyperbolically said, to some hundreds of years.—*Coleman*, p. 426.

CHANGA GADDA. TEL. Sanseviera Zeylanica.

CHANGAL or Champac. HIND.? A moderate-sized tree of Akyab, not plentiful. Wood used for boats.—*Cal. Cat. Ex.* 1862.

CHANGALI GADDI. TEL. Panicum comutatum, *Nees*; *P. ciliare*, *R.* i. 290.

CHANGALI KOSHTU. TEL. Costus Arabicus, *Heyne*.

CHANGAR, a predatory tribe of the Panjab.

CHANG BHAKAR, a small native state of Chutia Nappur, with a population of 8919. Its hills are clothed with the sal trees. Its people are Kolarian aborigines (Muasi Kuru), 3195, and Dravidian aborigines, 2955, viz. Goud, and are poor.—*Imp. Gaz.*

CHANG-CHEN-MO. This place gives its name to a route of about 16 marches between Ladakh and Eastern Turkestan, said to be the easiest from India to Upper Asia, much easier than the more westerly Kara Korum route traversed by Schlagintweit and Mr. Johnson. The heights vary from 19,000 to 21,000 feet, but the mountains are generally rounded, and fuel and grass are abundant, save at one stage. Gumah is equidistant between Ilchi and Yarkand, and the Kara Korum route meets this route at Shadula.

CHANGEZ KHAN or Jenghiz Khan, a name from the Uigur chang, firm, and Kissar ghiz, powerful. Temuchin, afterwards known as Changhiz, was born of a Mongol tribe on the banks of the Onon in 1162. He conquered and expelled Mahomed the Kharnamian, and defeated his son Jalaluddin, on the banks of the Indus. Aung Khan of the Keraite Mongols, celebrated in Europe under the name of Prester John, was a contemporary of Changez Khan, whom, at the instigation of jealous enemies, he attempted but failed to destroy.—*Elliot*, p. 498. As the result of Temuchin's successes against the nations of Tartary, he was saluted in 1206 by the diet of his nation as Changiz Khan. According to Quatremere, Changez did not use the higher appellation of Kaan (or Qaan), which was adopted by his son Okkodai and his successors as their distinctive title, identical with Khagan, the Xagano of the Byzantine historians. Properly a distinction should therefore be preserved between Khan, the ordinary title of Tartar chiefs, and which has since spread to Persian gentlemen, and in India become a common titular affix to the name of Mahomedans of all classes, and Qaan as the peculiar title of the supreme chief of the Mongols. The Mongol princes of the subordinate empires of Chaghtai, Persia, and Kapehak were entitled only to the former affix, though the other is sometimes applied to them in adulation, and claimed by all Afghans. The conquest of China was commenced by Changez, although it was not completed for several generations. In 1205 he invaded Tangut, a kingdom occupying the extreme north-west of China, and extending beyond Chinese limits in the same direction, held by a dynasty of Tibetan race, which was or had been vassal to the Kin. This invasion was repeated in succeeding years; and in 1211 his attacks extended to the empire of the Kin itself. In 1214 he ravaged their provinces to the Yellow River, and in the following year took Chingtu or Pekin. In 1219 he turned

his arms against Western Asia, and conquered all the countries between the Bolor and the Caspian, and southward to the Indus, whilst his generals penetrated to Russia, Armenia, and Georgia; and a lieutenant, whom he had left behind him in the east, continued to prosecute the subjection of Northern China. Changez himself, on his return from his western conquests, renewed his attack on Tangut, and died in that enterprise, 18th August 1227. Okkodai, his son and successor, followed up the subjugation of China, extinguished the Kin finally in 1234, and consolidated with his empire all the provinces north of the Great Kiang. After establishing his power over that part of China, Okkodai raised a vast army and set it in motion towards the west. One portion was directed against Armenia, Georgia, and Asia Minor, whilst another great host, under Batu, the nephew of the Great Khan, conquered the countries north of Caucasus, overran Russia, making it tributary, and still continued to carry fire and slaughter westward. One great detachment, under a lieutenant of Batu, entered Poland, burned Cracow, found Breslau in ashes and abandoned by its people, and defeated with great slaughter, at Wahlstadt, near Liegnitz (April 12, 1241), the troops of Poland, Moravia, and Silesia, who had gathered under Duke Henry of the latter province to make head against this astounding flood of heathen. Batu himself, with the main body of his army, was ravaging Hungary. The king had been very slack in his preparations, and when, eventually, he made a stand against the enemy, his army was defeated with great loss, and he escaped with difficulty. Pesth was now taken and burnt, and all its people put to the sword. The rumours of the Tartars and their frightful devastations had scattered fear through Europe, which the defeat at Liegnitz raised to a climax. Indeed, weak and disunited Christendom seemed to lie at the feet of the barbarians. The Pope, to be sure, proclaimed a crusade; and wrote circular letters, but the enmity between him and the Emperor Frederick II. was allowed to prevent any co-operation, and neither of them responded by anything better than words to the earnest calls for help which came from the king of Hungary. No human aid merited thanks when Europe was relieved by hearing that the Tartar host had suddenly retreated eastward. The Great Khan, Okkodai, was dead in the depths of Asia, and a courier had come to recall the army from Europe. In 1255, however, a new wave of conquest rolled westward from Mongolia, this time directed against the Ismaili or Assassins on the south of the Caspian, and then successively against the Khalifs of Baghdad and Syria. The conclusion of this expedition under Hulaku may be considered to mark the climax of the Mongol power. Mangu Khan, the emperor then reigning, and who died on a campaign in China in 1259, was the last who exercised a sovereignty so nearly universal. His successor Kablai extended, indeed, largely the frontiers of the Mongol power in China, which he brought entirely under the yoke, besides gaining conquests rather nominal than real on its southern and south-eastern borders, but he ruled effectively only in the eastern regions of the great empire, which had now broken up into four, viz. (1) the immediate empire of the Great Khan, seated

eventually at Keanbalik or Peking, embraced China, Corea, Mongolia, Manchuria, and Tibet, and claims at least over Tunking and countries on the Ava frontier; (2) the Chaghtai khauate, or middle empire of the Tartars, with its capital at Almalik, included the modern Dsungaria, part of Chinese Turkestan, Transoxiana, and Afghanistan; (3) the empire of Kapchak, or the northern Tartars, founded on the conquests of Batu, and with its chief seat at Sarai on the Wolga, covered a large part of Russia, the country north of Caucasus, Khwarizm, and a part of the modern Siberia; (4) Persia, with its capital eventually at Tabreez, embraced Georgia, Armenia, Azerbaijan, and part of Asia Minor, all Persia, Arabian Irak, and Khorasan.

The conquests of Changez Khan, and of his successor Okkodai Khan, in the first half of the century, brought into China a vast influx of Uigoor and Toongani immigrants. Atabeg, also Atabak, in ancient Persia, was an officer or prince, ruler of a province. Luristan seems to have been the latest territory so ruled, until Changez Khan, with his destructive hordes of Tartar and Moghul, overwhelmed the land. Changez Khan, with respect to religion, was the apostle of the most complete toleration. Mahomedans relate that he had the subject discussed in a mosque of Bokhara, and there laid down the principle that he required only faith in one all-powerful God, leaving all the rest to be supplied by man's free study and judgment. But the creed of Changez Khan was Buddhism.—*Princep's Tibet, Tartary, and Mongolia*, pp. 3 and 4; *Yule's Cathay*, i. cxviii., ii. 522; *Osborn's Islam*; *Vambery, Bokhara*, p. 120.

CHANG-GARH. ASSAM. A house raised on posts with a space open underneath,—the ordinary house of the Miri, Burmese, and Malay.

CHANG-KIA-KIOW, a pass from the great wall of China, in the province of Pe-che-lee, about a hundred miles to the westward of that of Kou-pe-keou, by which the embassy of Lord Macartney crossed the wall in 1793, and Sir George Staunton later. The words mean the gate of the Chang family.—*Staunton's Narrative*, p. 22.

CHANGIA. TEL. *Aucklandia costus*.

CHANGLO, a Tibetan race, a branch of the Lhopa of Butan. The Changlo dialect has a considerable amount of glossarial peculiarity with Tibetan, but in other respects it is entirely Tibetan softened and slightly changed in phonology. It is spoken along that portion of the northern frontier of the valley which extends from the Binji Doar to the confines of the Kuriapura Doar, or from about long. 90° to 92° E. Neither its northern limit nor the numbers speaking it have been ascertained. The inhabitants of this tract occupy the lesser elevations of the southern Himalaya range, and are, generally speaking, agricultural. Their physical appearance exhibits a few shades of distinction noticeable between them and the tribes of the Sub-Himalaya. They are smaller, less muscular, and the hue of their skin possesses a deep isabelline tint. From the latter circumstance, probably, they derive their appellation, the term Changlo meaning black.—*Jour. Ind. Arch.*, April—May 1853, p. 192. See India.

CHANGMA. HIND. *Populus balsamifera*, P. nigra, also *Salix alba*.

CHANG-MAI, a mode of spelling Zimnay of

the Laos. It is also written Xieng-ma. It is on the Menam river, between lat. 19° and 20° N.

CHANGO, a tribe of Hungrung Tartars occupying 378 square miles. See Kunawar.

CHANGOS, a village famous in olden times for its pretty dancing-girls; more than one Changos girl entered the zananas of the Delhi emperors. The dark eyes and sunburnt countenances of old and young still testify to a race distinct from their neighbours.

CHANGPA, a semi-nomade tribe near the Pangong Tai pass. They dwell in their grazing grounds under huts (galkol) made of the yak's hair. The people there call themselves Bot.

CHANGRA. HIND. *Capra hircus*, L.

CHANG-THANG. TIB. On the northern plains to the north of Ladakh, supposed to be the Chatae Seythæ of Ptolemy.—*A. Cunningham*.

CHANG-THANI. PANJ. A kind of wool.

CHANG-T'IENT-SZ, the chief of the Taoist priests, living at Kiang-si.—*Smith*, p. 5.

CHANGU. TIB. *Canis laniger*, *Holts*.

CHANI. TEL. *Adenantha aculeata*.

CHANJAN WALE. HIND. *Asparagus Panjabensis*.

CHANK. HIND. A harvest ceremony in several parts of Northern India, differing in each province. After the heap of grain on the threshing ground has been raised a foot high, a man, in silence, standing with his face to the north, a winnowing basket in his right hand, his left hand being full of grain, commencing from the south, goes round from east to west, and again to the south, pressing his basket against the bottom of the heap. This is repeated, changing hands, and when complete, he joins his hands, bows to the heap, and supplicates in a few words, either Parmeshwar or Anna Deota, as,

'Anna Deota ji,
Sahees goona hajiye.'

In the Lower and Central Doab and Sangor, a circle is made with cow-dung or ashes round the Ras and Thapa at the same time, commencing from the east, and going from south to west till the east point is again reached, the operator taking care all the while to hold his breath. A superstitious observance in the highlands of Scotland bears a remote resemblance to this.—*Elliot*.

CHANK. HIND. Also Chanka, and Ch'hapa. A stamp cut in wood, with the words Akibat ba 'khair bad,—May the end be prosperous; or Iman kisalamati,—Safety in your honour; and impressed on a cake of moist earth (barkat ki matti) on stacks or heaps of grain which are left in the care of one of the parties between whom it is to be divided. The words on the stamp mean, 'May the end be happy,' and 'Security on honour,' implying that the grain is left to the honour of the person keeping it. The seal is then placed on the sides of the heap, never on the top, lest the increase of corn be thereby prevented. It is the system of making an article over to the Supreme Being, common in Africa and the Archipelago, under the term Taboo, and it is similar to the Ch'hutoor of the Hindu.

CHANKEE. MALAY. Cloves. *Caryophyllus aromaticus*.

CHANK SHELLS, Konk, Conch.

Bukk,	DUKH.	Sankha,	TAM.
Senkham,	SANSK.	Sangu,	"
Shanku,	"	Senkham,	TEL.

These shells are species of the genus *Turbinella*, fished up by divers in the Gulf of Manaar, on the coast opposite Jaffnapatam in Ceylon, in about two fathoms water, and at Travancore, Tuticorin, Kila-Karei, and other places. Large beds of fossil chanks have also been found. They form a considerable article of trade in India, as they are in extensive demand all over the country. The fishery is chiefly worked at Kila-Karei in the Ramnad territory, and Tuticorin in the Tinnevely district. They lie at the bottom in from 2 to 5 fathoms of water. The divers carry a bag round their necks, and dive and grope over the bottom; 20 chanks are a very good haul for one plunge. The rents paid to the zamindar of Ramnad are £500, and to the British Government £1000. The fishing season is from October to March. Chank shell was one of the insignia of royalty of the Chalukya dynasty when ruling at Kalian. The Chank and the Voluta species are used for making the shell ornaments of Dacca.

They are sawn into narrow rings or bracelets, armlets, beads, and are worn as ornaments for the arms, legs, fingers, etc., by Hindu women. Many of them are also buried with the bodies of opulent and distinguished persons. Those which, from being taken with the living mollusc, are called green chanks, are most in demand. The white chank, which is the dead shell thrown upon the beach by strong tides, having lost its gloss and consistency, is not worth the freight up to Calcutta. The value of the green chank depends upon its size. A chank opening to the right, called in Calcutta the right-handed chank, is so highly prized as sometimes to sell for 400 or 500 or even 1000 rupees. Even 20,000 rupees have been named. The Jangam religious mendicants and those of the Viranrusty sect blow them as horns. The commercial returns show an exportation from Madras of ten to twenty-four lakhs of these shells in one year.

1852-53, . . .	15,15,495	Rs. 54,780
1853-54, . . .	24,60,727	1,04,481
1854-55, . . .	10,84,575	56,165
1855-56, . . .	Not given	26,171

They are classed as Patty and Pajel, or short and pointed headed, and Wallampory, or right-hand chanks. Bertolacci mentions, as a peculiarity observed by the Ceylon fishermen, that all shells found to the northward of a line drawn from a point about midway from Manaar to the opposite coast at India are of the kind called Patty, and are distinguished by a short flat head; and all those found to the southward of that line are of the kind called Pajel, and are known from having a longer and more pointed head than the former. Nor is there, he says, even an instance of deviation from this singular law of nature. The Wallampory or right-hand chanks are found of both kinds. Chanks are alluded to in *Cosmos Indicopleustes*, and by Abu Zaid in *Voyages Arabes*, showing that so early as the 6th century this shell was fished for. The fishery until a few years ago continued a government royalty. The Sankasari of Dacca are famed for their skill in working with the chank or sank. *Turbinella rapa* is used as a trumpet, a hole being bored through its base. When blown into it gives a loud, sharp, and piercing sound. It is used in Hindu worship to call the attention of the gods to their worshippers. The conch shell, used for pouring water

on the gods, is a smaller one, the Mazza rapa of naturalists. The pictures and figures of the Hindu god Vishnu always represent him with a chank shell in one hand, and a discus or chakra in the other. In ancient times, the Indian warriors used the chank as a trumpet. Chankangan of Shahpur is a silver armlet worn with churis or bracelets.—*Rohde, MS.; Ainslie, Mat. Med. p. 143; Tennent's Ceylon; Hooker, ii. 254.*

CHANNA. HIND. The pulse *Cicer arietinum*, called Bengal gram, gram, and chick-pea. Channa siya is black gram, and Channa Kabuli, Kabul or white gram. Its principal use is to feed horses and cattle, but the people of N. India often eat it. An acid forms on the leaf of the channa, a mixture of oxalic and acetic acids, which is used in chemical processes, and in the preparation of nitric and muriatic acids. Cloths spread on the plant become moistened by the dew, and absorb the acid.—*Elliot.*

CHANNAN, also Chanuni, on the Chenab, etc. *Populus alba*, the white poplar.

CHANNI. HIND. *Daphne oleoides*.

CHANOO. BENG. *Apium involucreatum*.

CHANOS ARGENTEUS. Bloch. The milk fish. *C. salmoneus*, introduced from the sea into a tank in Canara.

CHAN-PA, the Tibetan name of Great Tibet. It means snow-land. See Lhassa.

CHANTABURI, a port of Siam, the second in commercial importance. It is at the mouth of a short river, which fertilizes a considerable district by its inundations during the rainy season. The rocks at the entrance of Chantaburi resemble a colossal lion couchant. Chantaburi, which means the nutmeg country, is also a range of mountains east of Siam, whose defiles are held by the Xong or Ching, said to be an offshoot from the Karen. The wax sold by the Xong is the produce of wild bees of gigantic size, which build their cells on the top branches of trees at the height of 150 feet.—*Bowring's Siam.*

CHANUNI. HIND. *Populus ciliata*, *Populus alba*; the ban.

CHAN-YO or Chan-Yu. CHIN. *Dioscorea batatas*.

CHANZ, a pass leading from Kashmir to Tibet. It is also called the Sang-i-Safed.

CHAO. TIB. A monastery.

CHAO-ME-DO, also Chao-mo-to, a place lying between the great wall of China on the Kalgam and Selinginsky, in the country south of the Amur. It is signalized as the place where the rebel Koeur-tan (Kal-dan) was finally defeated, A.D. 1696. Kaldan was uncle to the reigning prince, Tae-vang-Rah-dan, and had stirred up the Eleuth Tartars to rebel. See Kalkas.

CHAORI. HIND. A police station; the village forum.—*Elliot.*

CHAORI. HIND. This is made of ivory, bone, or shell, and is the most ancient ornament of the Indo-Scythic dames. It appears in old sculptures and paintings. In a very old Gothic church at Moissac in Languedoc, the porch, attributed to the age of Dagobert, is the only part left. Sculptures on it represent the conversion of Clovis. Some sculptured figures below are of a distinct age, of an Asiatic character, showing the scarf, the champakuli or necklace representing the buds of the jessamine (champa), and chaori.—*Tod's Rajasthan, ii. p. 284.*

CHAUOS. TURK. A herald, a running footman, an interpreter. The word is supposed to have originated the English phrase, to chowse, or cheat, as the Turkish interpreters so frequently misinterpret.

CHAOU SEEN, the native name of Corea.

CHAP. HIND. An impression from a stamp or seal, from the verb chapna, to stamp or seal. The Chinese 'chop' is a stamped permit; hence also the Hindi term Chapa-khana, a printing press. properly Ch'hap. Chap-ka-lac, sealing-wax.

CHAP. HIND. The refuse of the jhuburee, after the pala is beaten from it.—*Elliot.*

CHAP. BRAHUI. Stone circles of different kinds, commemorative of weddings amongst the nomade Brahui.

CHAPADA, or Chopada. SUMATRAN. Fruit of *Artocarpus integrifolia*.

CHAPA JANNA. TEL. Fish roe.

CHAPAO, a raid, an inroad. The Turkoman inhabitants of the deserts have ever been famous for their terrible inroads into the Persian provinces. They are of the Sunni creed, a cruel and rapacious race, and always prefer flight to facing a superior force. The arms of the Turkoman are a spear 10 feet long, and a sword. They are excellent horsemen, and pass their lives in pillage and rapine. When a chief determines upon making a chapao, a month is given to his followers to get their horses into proper condition. Spies are sent out, and news being brought, the whole party gallops swiftly on the prey, whether caravan or village. In a few minutes all is over, the people carried off into slavery, and the village burnt. The prisoners are tied to the saddle-bows of the captors, and are treated with horrible cruelty, until they are finally sold in the slave markets of Khiva. The horses of the Turkomans have been known to go over 600 miles in six days.

CHAPAR. HIND. A thatch of straw, also roofing slate.—*Elliot.*

CHAPATI. HIND. An unleavened cake baked on a girdle, eaten by the people of Hindustan. Prior to the mutiny of 1857, wheaten cakes were circulated amongst the people. The meaning of that act remains unknown.

CHAPKAN. HIND. A jacket fitting close to the body, opening at one side of the front, and prefixing.

CHAPLASHA. HIND. *Artocarpus chaplasha*.

CHAPLET, or immortelle, made of the flowers of an 'everlasting' (*Helichrysum, sp.*), commonly hung about tombs.

CHAPLI. HIND. Leather or leaf sandals.

CHAPTALIA GOSSYPINA. —?

Oreoceria lanuginosa.

Shepherd's tinder, . ENG. | Kuff, Kuffee, Sookta, PAN.

This is found in the Sutlej valley between Rampur and Sunnam, at an elevation of 7000 to 9000 feet. The tomentum or downy filament on the under surface of the leaves is employed by the hill people as tinder.—*Cleghorn.*

CHAPTI-LAC. HIND. Shell-lac.

CHAPU. TEL. Fishers.

CHAR. HIND., PERS. Four. Char-yar, lit. four friends, a Sunni Mahomedan, who maintains that Abubakr, Omar, Osman, and Ali were the rightful succeeding khalifs. Char in composition is softened into chau. Char-abru, the beard, the moustaches, eyebrows, and hair on other parts of the body.—*IV.*

CHAR, also Char-Charoli. MAHR. *Buchanania latifolia*. *Valeriana Wallichiana*, *Valeriana Hardwickii*, *Quercus semecarpifolia*.

CHAR or Chur. HIND. A shoal, a sandbank. Baluchar, land covered by a deposit of sand.

CHARA. HIND. Fodder, forage, green grain; wheat or other crop cut for forage or fodder; also a truss, a sheaf, grass, food for animals.

CHARA CHETTU. TEL. *Buchanania latifolia*. Fruit called Chara pappu, Charu mamidi.

CHARADRIUS, the plover genus of birds, species of which are common to India and Europe. Ch. *hiaticula*, the ringed plover of Europe, N. Asia, Japan, Greenland. Ch. *Cantianus*, the Kentish plover of Europe and Asia, not uncommon in India. Ch. *Philippinus*. Ch. *minor*, the little ringed plover of Europe, Asia, North America; rare in Britain, exceedingly common in India. Ch. *pyrrhotorax* is a very common Indian species, known in Europe as a straggler.

CHARAGH. HIND. A lamp. Charaghan-i-Zandah Shah Madar, a Mahomedan festival held on the 17th Jannadi ul Awal, in honour of Badi-ud-Din. He is said to have been a Syrian saint; to have lived at Makanpore, in Oudh, to a great age, or to be even yet living, hence the appellation *zandah*, alive. His flag is black. *Dam-i-Madar*, or breath of Madar, is a charm against sickness. *Charaghii*, a present made to a Mullah for offering up oblations at the tomb of a saint; literally, lamp expenses.

CHARAI. HIND. of Kaghan. *Juniperus excelsa*, *J. arborescens*; pencil cedar.

CHAR AIMAK. Aimak is a Mongolian, Manchu, and Turki word, meaning a tribe. Of these, there are in Kabul and Persia four, the Char Aimak. They dwell to the north of Herat and Kabul, in the undulating country, which in some places assumes a mountainous, in others a hilly character; in some parts is well watered, in others bleak and rough, forming a watershed of two natural divisions, from the western of which flows the Murghab, the Tajend, and the Farrah-Rud, and from the eastern, the Helmand, the south-eastern feeders of the Oxus, and the north-western feeders of the Kabul river. It is said that Timur, exasperated at the depredations committed by the people inhabiting Mazanderan, south of the Caspian, transported the whole of them into the mountains situated between India and Persia. The descendants of that people form the four tribes or Aimak. They are also called Firoz Kohi, after the city of that name (situated about 63 miles from Teheran), where they were defeated and taken captives by Timur. According to Latham, the four Aimak are the Timuni, Hazara, Zuri, and Timuri. Vambery says the four tribes are the Timuri, Teimeni, Firoz Kohi, and Jamshidi, and of Iranian origin, who speak Persian. The Timuri dwell about Gorian and Kah'san, the Teimeni from Karrukh to Sabzwar, the Firoz Kohi near Kala-i-No, and the Jamshidi on the shores of the Murghab. In their reverence for fire, and their respect to the east, to which their tent doors look, they retain many of the fire-worshipping views. Their number is estimated at 400,000. — *Latham's Ethnology*; *Ferrier's Hist. of Afghan*, p. 3; *Vambery, Sketches of Central Asia*. See Aimak; Mongols.

CHAR-AINA. HIND. Armour-plates worn by the Sikhs.

CHARAITA. DUKH. *Agathotes chirayta*, G.

Don. This valuable bitter is largely employed in medicine, being a perfect substitute for the gentian of Europe. Several plants are, however, used under this general name. The *Andrographis* (*Justicia*) *paniculata* is one of the best of these, and the *Ophelia elegans* is another.

CHARAKA, a medical writer who lived in Vedic times. He states that he received the materials of his work from Agnivesa, to whom they were delivered by Atreya. Professor Wilson gives the 9th or 10th century A.D. as his era. His book was translated from the Sanskrit into Arabic before the end of the 8th century A.D. — *Dowson*.

CHARA KANDA. TEL. *Colocasias nymphæfolia*, *Royle*.

CHARAN, a sacred race in the west of India, whose character and pursuits almost resemble those of the Bhat, or Bards, and the origin of both is involved in fable. In Hindu mythology, the Bhat are said to have been produced to amuse Parvati, from the drops of sweat on Siva's brow, but they sang the praises of Siva only, which so offended Parvati, that she turned them out of heaven, and condemned them to lead a wandering life upon earth, to sing there the martial deeds of heroes and the praises of the gods. According to another legend, Mahadeva created a bard to attend to his lion and his bull, but the bull was daily killed by the lion, on which Mahadeva, tired with daily creating a bull, formed the Charan to be their attendant. The Charan was equally devout with the Bard, but of bolder spirit, and from that date the bull was never destroyed by the lion. It is an allegory of brute violence and justice. The Charans of the Maru or desert in the sandy tract of the Indus, are mendicants who attend at marriages and festivals, and threaten to injure themselves if not relieved. The Charan is generally revered, and follows the profession of a bard, herald, and genealogist, and as such is often taken as personal security, the breach of which was followed by the death of the Charan, or of some member of his family. On this account it was usual for travellers in Malwa and Gujerat to hire a Charan to protect them, and the sanctity of his name was generally sufficient. If robbers appeared, he stepped forward, waving his long white garments, and denouncing in verse, infamy and disgrace on all who should injure travellers under the protection of the holy members of Siva. If this failed, he stabbed himself with a dagger in the arm, declaring that his blood was on their heads; and if all failed, he was bound in honour to stab himself to the heart. This is termed Chandi. The Charan, young and old, are not merely taught to desire to die when the honour of the family or clan requires it, but one and all are eager to be the first to die. Charan are divided into two tribes, the Kachili, who are merchants, and the Maru, who are Bards. These, again, branch out into 120 clans. The Kachili and Maru do not intermarry, but the latter intermarry with Rajputs. The Charan are taught to read and write. The mercantile tribe, who traffic in camels and horses largely, are shrewd men of business. The Maru tribe are genealogists and Bards, celebrate the praises of heroes in legends and songs. The warlike tribes esteem the heroic lays of the Bard more than the homily of the Brahman. The Charans are throughout revered by the Rahtor, and hold lauds literally

on the tenure of 'an old song.' A colony of Charans from the frontiers of Cutch Bhuj was founded at Murlah, near Chitore, by rana Hamir, who is celebrated in the history of Mewar; he had a leprous spot on his hand, to remove which he made a pilgrimage to the shrine of Hinglaj, upon the coast of Makran, the division Oritav of Arrian's geography. The Marlah Charans are of the tribe Kaucholeah, and are grain-carriers. The sanctity of their office made their persons sacred, and the immunity extended likewise to their goods, and saved them from all imposts; so that in process of time they became the free-traders of Rajputana. This community collectively advanced to receive Colonel Tod at some distance from the town. The procession was headed by the village band and all the fair Charani, who, as they approached, gracefully waved their scarfs over him. It was a novel and interesting scene: the manly persons of the Charans, clad in the flowing white robe, with the high loose folded turban inclined on one side, from which the mala, or chaplet, was gracefully suspended; the naiks or leaders, with their massive necklaces of gold, with the image of the pitriswur (manes) depending therefrom, gave the whole an air of opulence and dignity. The women were uniformly attired in a skirt of dark brown camlet, having a bodice of light-coloured stuff, with gold ornaments worked into their fine black hair; and all had the favourite churi, or rings of hati-dant (elephant's tooth), covering the arm from the wrist to the elbow, and even above it. The founders of this little colony accompanied rana Hamir from Gujerat in the early part of his reign, and although five centuries have elapsed, they had not parted with one iota of their nationality or their privileges since that period; neither in person, manners, nor dress had they anything analogous to those amidst whom they dwell. Indeed, their air is altogether foreign to India; and although they have attained a high place amongst the tribes of India, their affinity to the ancient Persian is striking,—the loose robe, high turban, and flowing beard being more akin to the figures on the temples of the Guebres than to anything appertaining to the Char-burruu or four classes of the Hindus. — *Rajasthan*, ii. p. 622.

CHARANA. HIND. Footprints of the Jaina thirthankara, Reshabhanata. See Rayana.

CHARAN-AMRIT, HIND.; also Charanodaka, water in which the feet of a Brahman has been washed.—IV.

CHARANDAIN, disciples of Charan who lived in the days of Ramanuja. Their ceremonies and habits are similar to those of Vaishnava, Bairagi, and Kabirpanthi.—*Sherring's Tribes*, p. 267.

CHARAN DAS, founder of the Charan Dasi sect, was born at Dehra, near Ulwar, in s. 1760 (A.D. 1703). When very young, he was taken to Dehli. He was a good musician. He died s. 1839 (A.D. 1782). The sect keep images in their temples, and respect Brahmans. He lived in the time of Alamgir II., and Sahaji Bai, his sister, was his first disciple. Charan Dasi are Vaishnava Hindus, who worship Krishna and Radha. Charan Das was of the Dhusar merchant tribe, and resident of Dehli. His followers are both clerical and secular. At Dehli is the samad'h or monument of their founder.—*Wilson*. See Hindu.

CHAR-ANGLI. HIND. of Salt Range. Bouccerosia edulis.

CHAR-ANKH. HIND. A meeting; literally, four eyes.

CHARAN-PAD, also called Padka, two feet engraved on the top of the tombstone of a Gosain, to mark his tomb or samad'h.

CHARA-PUPPU. HIND. Buchanania latifolia.

CHARAS, in Kachar, seedling rice for transplanting.

CHARATI. SANSK. Ionidium suffruticosum.

CHARAY, also Churay. HIND. A knife, any knife; also the knife of the Afghan, a long single-edged dagger, used with much effect by them. It is about the size of the old Roman sword, and speaks volumes for the courage of the wielders.—*Burton's Scinde*, ii. p. 267; *Pilgrimage*, i. p. 320.

CHARAYUM. TAM. Arrack. Charaya karan, MALEAL., is a distiller or vendor of spirituous liquor.

CHARAZ, also Charas. HIND. of S. India. Sypheotides auritus, *Latham*; the florikin.

CHARBAR, Charba, or Chewabad Bay, the best in Makran, is formed by Ras Maleddam or Koolab point on the west, and Ras Charbar on the east. Charbar town has about 1500 inhabitants; it is surrounded by a mud wall. The inhabitants and the cattle live entirely on fish, oysters, crabs, and shell-fish, those for the cattle being mixed with dates. All on that coast, which is the country of the ancient Ichthyophagi, have similar food.

CHARCHARILA. HIND. *Parmelia Kamtschadalis*, and other species of *Parmelia*.

CHARCOAL.

Zugal, Fahm-chobi, ARAB.	Koela, Kolsa, . . . HIND.
Mithwa, BURN.	Carbone de legna, . . . IT.
Peh-tan, Pan-tan, CHIN.	Arang-bara, . . . MALAY.
Peh-tsan-shwang, . . .	Lippe anghoru, . . . SINGH.
Charbon de bois, . . . FR.	Carbon de lena, . . . SP.
Kholesstoff, . . . GER.	Adapu carri, Karri, . TAM.
Reino kohle,	Bogu, Poibogulo, . . TEL.

In the south and south-east of Asia, coal being found only in distant localities, and the cost of carriage great, charcoals are in great request. In the Peninsula of India, the common native mode of preparing them is to set on fire a heap of small wood, and, after allowing it to burn for some time, to quench it either by water or by heaping earth upon it; but charcoal so prepared is of little value in reducing iron ore, and the process is wasteful. The destruction of firewood in the neighbourhood of ironworks is grossly extravagant. Native iron-smelters only employ fuel from one to three inches in diameter; and to procure this they take saplings, or the tops and branches of the largest hardwood trees, allowing the trunks to decay. They do this because large trees are not adapted for fuel for native smelting, as the cost of splitting them adds greatly to the expense; and unless the logs be split, the inner wood is not carbonized. Charcoal, to be good, should be of wood burned with as little exposure to the action of the air as possible, and be black, brittle, easily pulverized, perfectly insipid, solid, and inodorous. Charcoal is mostly used as a fuel, but also in the manufacture of gunpowder. For the forge, the best is that prepared from bamboos and from stems of palmyra leaves (Tati komaloo, TEL.). The tamarind yields a good charcoal for the same purpose, as do most hard woods, but the charcoal of the *Acacia sundra* is said to be amongst the best

for this purpose. Other woods used in the S. of India are the vella-marda, karra-marda, crool, Indian gooseberry, the poohum, the nux vomica, and the cassan. In Northern India, *Acacia catechu*, *A. modesta*, *Cassia fistula*, *Butea frondosa*, *Capparis*, *sp.*, *Pinus longifolia*, *Prosopis spicigera*, *Salvadora*. For gunpowder, the roots of the milk hedge, *Euphorbia nerifolia*, and of the *Calotropis gigantea* are preferred. At the Madras Government Powder Mills, that of the gram bush, *Dolichos uniflorus*, and in those of Bengal and Bombay, the *Cajanus Indicus*, or pigeon-pea stalks, are used. Charcoal used for gunpowder manufacture is generally made from small shrubs or herbs, as *Vitex*, *Cajanus*, *Calotropis*, and *Parkinsonia aculeata*, the *Parkinsonia* being said to yield a very good charcoal for gunpowder, though the gunpowder considered the best is manufactured from the *Sebania Egyptica*. The gunpowder charcoal used at the Damuda coal-works is made from an acacia. The Sikhs employed *Justicia adhatoda*, which is also in use all over India. At Aden the Arabs prefer the *Calotropis*, probably because it is most easily procured. The grain of all these plants is open, whereas in England closer-grained and more woody trees, especially willows, are preferred. In India, gunpowder charcoal is also made from the *Adhatoda vasica*, *Alnus*, *Butea frondosa*, *Colebrookia oppositifolia*, *Cornus macrophylla*, *Daphne oleoides*, and *Hamiltonia suaveolens*. In China the gunpowder charcoal is made from the *Cunninghamia Sinensis*. Charcoal is burned as a disinfectant on the last days of the year, in all Chinese houses. Charcoal powder, *Pan-moh*, *CHUN*, is used internally in China, mixed with water, in metallic poisoning, in acute diseases of the throat, and in dysentery.

In Ceylon the cashew nut tree is considered the best sort of wood for charcoal for ironsmiths, and is felled for this purpose only. At Darjiling that of the chestnut wood is used by blacksmiths. In Nepal the best is made of the wood of the bahang, or holly-leaved oak. In Kullu and Kangra the wood chiefly used for charcoal is *Chil*, *Pinus excelsa*; but the alder (*kaunch*) and *Alnus Nepalensis*, which fringes the tributary streams, is also employed for this purpose, as no hard woods are available. The lighter woods generally yield lighter and more combustible charcoals. Nevertheless the dogwood of Britain, the wild cornel tree, which makes the strongest of the British gunpowders, and is exclusively used for the powder of the breechloading firearms, is a dense, comparatively heavy, slow-growing wood. In Britain, the alder, the willow, and dogwood are the only woods used for charcoal in the Government establishments,—the two former for cannon powder, the last for small arms. Private makers use the same woods, and they use the last for the forest sporting powder. The three woods grow well in England, but they are chiefly obtained from Belgium, Holland, and Sussex, the dogwood selling at £12 to £15 the ton. Coarser woods are used for common blasting powder. There are many circumstances connected with this ingredient of gunpowder not yet understood, but it seems to be the variations in charcoal which cause the differences in the powder. Charcoal is little liable to decay. The best charcoal for a dentifrice is that of the betelnut. Charcoal possesses remarkable antiseptic properties, as it resists the putrefaction of animal

matter, and destroys the smell and colour of many substances. — *Mr. Faulkner*; *Mr. Rohde*; *Dr. Cleghorn*; *McCulloch's Dic.* p. 266; *Mr. Wall's Report in G. O.* 17th July, No. 1040 of 1859; *Hooker's Him. Jour.* i. p. 9; *Edge, Mal. and Can.*; *Dr. J. L. Stewart*; *Quarterly Review*, July 1868.

CHAR-DANGHEH, in Persia, a mode of dividing fields. See Danganl.

CHAR DEH, the town of Kabul is built at the foot of a hill of gneiss that rises 1000 feet above it. The town bends round it from the south-east to the south-west, where, with the dip of another hill opposite, is formed the pass, 150 yards broad, that leads into Char-Deh. Kabul may be described as lying at the foot of a range of hills whose direction is from north-east to south-west. The country is thus divided into the plain of Kabul, and the Char-Deh, or four villages. See Kabul.

CHARDIN, SIR JOHN, travelled in Persia and the East Indies from 1664 to 1670. The first part of his *Journal du Voyage* was published in London, 1686, and the second and third at Amsterdam in 1711. In 1811 his travels were republished in Paris.

CHARGUL, HIND. An ornament worn by women in Hazara.

CHARI, the doe of the Antelope Arabica.

CHARI, HIND. Stalks of millet, etc., sown close for fodder; also *Sorghum vulgare*; *Carex Indica*? Rang-Chari is *Eisholtzia polystachya*.

CHARIKAR, a town in long. 68° 59' E. and lat. 34° 28' N. It is near Beghran, and 30 miles north of Kabul. From Charikar to Jellalabad the road is open, and it is supposed that Alexander, whether he recrossed the mountains at Bamian or at Beghran, marched by this route on India. It is on the high road between Kabul and Turkestan, and the valley offers supplies of all kinds.—*MacGregor*, p. 211.

CHARIKONA SHIM, BENG. Goa bean; *Psophocarpus tetragonolobus*.

CHARI-MARAM, TAM. Ebony.

CHARIOT. In Judges iv. we are told that Sisera had 900 chariots of iron. From the Sanskrit work called the *Dhanurveda*, it appears that the Hindus had war chariots similar to those of Sisera. They are described as having had many wheels, and to have contained a number of rooms. The war chariot was peculiar to the Indo-Scythic nations, and was in use in India from the days of Dasaratha and the heroes of the Mahabharata, to the conquest of the Hindus by the Mahomedans, when it was laid aside. On the plains of Kurukhet, Krishna became charioteer to his friend Arjuna; indeed, the title Dasaratha means a charioteer. The Getic hordes of the Jaxartes, when they aided Xerxes in Greece and Darius on the plains of Arbela, had their chief strength in the war chariot. The war chariot continued to be used later in the south-west of India than elsewhere; and the Cat'hi, Comani, Comari of Saurashtra have, to recent times, retained their Scythic habits, as their monumental stones testify, expressing their being slain from their cars.—*Tod's Rajasthan*. See Hindu.

CHARITA, the first degree in the Saiva system.

CHARIZM, in the 6th century of the Hijira, a Charizmian empire rose on the ruins of the Scljukidæ, which extended itself over Tartary and the greatest part of the Persian provinces. During the reign of Mahomed, Chengiz Khan overran

the Charizmanian empire.—*Dow's Hindostan*. See Kharsan.

CHARJ. BENG. Otis Bengalensis.

CHAR-JAMA. HIND. A sort of horse housing in two pieces, one for each side under the saddle.

CHAR-JATI. HIND. The four clans of the first class of the Khatri, viz. Seth, Marhoti, Khunna, and Kupper.

CHARJUI, in lat. 39° 5' N., and long. 63° 40' E., a town in the district of the same name, 6 miles inland from the left bank of the Amu. It has about 4500 inhabitants. The Saugan (*Cyprinus calybeatus*) and the lakka (*Silurus glanis*) attain a large size at this part of the Amu.

CHARKA. HIND. *Letsa*, *sp.*

CHARKARI MAHAL, in the Panjab, the portion of a doab requiring well irrigation.

CHARKH. HIND. A pulley over which a water-rope runs; a wheel; the sheave of a block; a needlemaker's grinding wheel; a cotton-cleaning wheel; also the rope-twister's apparatus; a spinning-wheel.

CHAR-KHAHEH. HIND. Chequered muslin; also called Zilmili. Charkhi, a kind of silk of Kābul.

CHARKH PUJA. HIND. Cheddul, TAM. A barbarous ordeal among the lower classes and low castes of Hindus of India. By self-inflicted wounds, or being suspended in the air by hooks passed through the back, individuals hope to expiate their sins. It is commonly called the Swinging Festival, because the more prominent form of expiation amongst Hindus is that of swinging, suspended by hooks through the skin over each shoulder-blade, and connected by ropes with one end of a lever, traversing an upright post, to which a circular motion is given. It is held when the sun enters Aries. But children of tender years, aged five or six, were to be seen with bamboo sticks through both cheeks. Hooks from a lever are passed through the skin over each shoulder-blade, and the lever is made to rise high in the air and revolve with the hooked person. Wood and iron and snakes are passed through the tongues, the cheeks, and the skin of devotees and of young children. The devotees are called Gajan, and it is in honour of Siva that they inflict tortures on themselves. The British Government about the middle of the 19th century prohibited its practice in British India. See Siva.

CHARKHRE. HIND. *Carpinus viminea*.

CHAR-KUCHOO. BENG. *Colocasia antiquorum*.

CHARLANG, a section of the Bakhtiari tribes.

CHAR-MAGHZ. HIND. *Juglans regia*; the walnut, lit. 'the four-kernelled fruit.'

CHARMS.

Talsin, Tawiz, . . . ARAB.	Ism, . . . HIND., PERS.
Hegab, . . . EGYPT.	Incanto, Alletamento, IT.
Charme; enchantement, F.	Encanto, Embeleso, SP.
Nazr-band, . . . HIND.	Mantra, . . . SANSK.

Charms are in general use amongst all races; and amulets are worn and used both to work for good and to work for evil. The custom of inscribing mystic characters upon the person as a safeguard, or having them engraved in the form of an amulet or charm, is of the most remote antiquity. Cain had a mark set upon him, which denoted the bearer to be placed under the immediate protection of Heaven, so that no man might slay him. The blood sprinkled on the door-posts of Israel in

Egypt was a sign that the destroying angel was not to enter, the inmates being under the divine protection. A similar preserving token is referred to in Ezekiel ix. 2, where the man 'clothed in linen,' having a writing inhorn by his side, was commanded by God to set a mark upon the foreheads of those who grieved for the abominations of Jerusalem. 'Behold my sign!' says Job xxxi. 35, according to the marginal reading; or, 'Behold, here is my Thau' (a mystic mark), as Calmet renders it. Paul, probably alluding to some acknowledged sacred sign, observes, 'Henceforth let no man trouble me, for I bear in my body the marks of the Lord Jesus.' Portions of St. John's Gospel were worn by the early Christians, and verses of Scripture were even placed upon horses. Among the Anglo-Saxons, amulet gems were much esteemed. King John had a large collection; and, in the 16th century, amulets were warehoused in England in large quantities, and usually worn round the neck, as a protection from pestilence (Gage's Hengrave, p. 155). A ms. poem on the virtues of gems, written by Pierre de Boniface in the 14th century, says: 'The diamond renders a man invincible; the agate of India or Crete, eloquent and prudent; the amethyst resists intoxication; the carnelian appeases anger; the hyacinth provokes sleep' (Milner's Seven Churches of Asia, p. 127). The six descriptions of charms or mantra known in Gujerat, are described in the Mantra Shastra. Marun Mantra has the power of taking away life; Mohun Mantra produces ocular or auricular illusions; Sthambhun Mantra stops what is in motion; Akurashun Mantra calls or makes present anything; Wusheekurun Mantra has the power of enthralling; and Oochatun Mantra of causing bodily injury short of death (*Rasunala*, Hindu Annals, ii. p. 403). Charms, amulets, talismans, and phylacteries all belong to the list of articles which produce imaginative cures, seeing that the persons who trust to them believe in some good obtainable from them, in purse or in person, in health or in welfare. The amulets, hung in a little bag around the neck, are very widely credited with the power of warding off disease. One peculiar kind of amulet is the phylactery, a bit of parchment on which a few sacred words have been written; if worn on the person, it is a safeguard against disease and calamity. The Jews in the East used to carry such an amulet written with a Hebrew verse from the Bible; and some of the Mahomedans with an Arabic sentence from the Koran. The Burmese insert lumps of gold beneath the skin, to procure invulnerability, and Burmese are said to conceal gold in that manner. Many of the charms worn by Hindus and Mahomedans are merely to distract or avert the evil eye. A not unfrequent one, in sickness, is a string formed of hair of the head, to which is attached a piece of the *Acorus calamus* root, a cowrie shell, a marking nut, and the eye of a peacock's feather. In the Illahi Namah (section 12), it is mentioned that women, during parturition, derive considerable benefit from wearing a charm composed of certain ingredients made into a little ball, which must be perforated with a hog's bristle (*Ouseley's Travels*, i. p. 227). Most of the Mahomedan pilgrims, when moving towards Mecca, have a charm or tawiz suspended around their necks; and almost all Mahomedans,

when setting out on a journey, bind a piece of money on their arm, as a votive offering to the Imam Zamin. In Arabia, the instant a foal is born, a charm is tied round its neck in a bag of black cloth, and sometimes in this the pedigree is placed. Many of the Mahomedans of Turkey and Asia carry talismans about with them, especially in war, consisting of verses of the Koran, to which they attach extraordinary influence; and with one Mahomedan soldier, who had fallen in battle, a whole Koran was found wrapped in the rolls of his turban. The Mahomedans put up charms over the lintels of the doors, on the walls of their houses, and almost constantly use them on their arms as amulets, for the cure of ailments, to cast out devils, to ward off demons, fairies, enchanters, and to cleanse a haunted house. In exorcism, certain names (Ism, sing.; Isma, pl.) are used by Mahomedans. The ism-jallali, or fiery or terrible attribute, is used; also the ism-jamali, the watery or air attribute; and with these they cast out devils, and command the presence of genii and demons. Amongst Mahomedan women love-philters are in frequent use; and engraved amulets, and leaves and roots of plants, are worn by them to retain or win affection. The Rev. Mr. Ward saw a Mahomedan woman dropping slips of paper into the river, and upon inquiry found that they contained some sacred words, and that the woman was presenting those papers to the river-saint, Khaja Khizr, in hopes of obtaining relief. Persians consider the number thirteen so unlucky, that, in general, they will not even name it. When they have occasion to allude to this number, instead of mentioning *sazdeh* (thirteen), they say *ziyal* (much more) or *heeh* (nothing). In ancient Rome, the ladies wore the phallic emblem to overcome their sterility. It was a mango-fruit, given by a rishti to Jansindha's father, and eaten by his mother, which begot that famous Maghada prince of old. To this day, very often do barren Hindu women, and those who lose their children in the cradle, repair to the most reputed shrine of Siva in their neighbourhood, and by fasts and vigils ensure his blessings for progeny.

Ianc says in Egypt the most esteemed of all hegab or charms is a mushaf (or copy of the Koran). This and others are worn by many women, generally enclosed in cases of gold, or of gilt, and plain silver. Next in estimation to the mushaf is a book or scroll containing certain chapters of the Koran, as the 6th, 18th, 36th, 44th, 55th, 67th, and 78th, or some others, generally seven. The ninety-nine attributes of God, written on a paper, and worn on the person, are supposed to make the wearer a particular object for the exercise of all the benevolent divine attributes. The names of Mahomed's relics are also charms. These relics, called Mukhallafat un Nabi, were two sabluhs (or rosaries), his mushaf (in unarranged fragments), his mukhul'uh (or the vessel in which he kept the black powder with which he painted the edges of his eyelids), a furdah or kind of woollen covering. Sometimes, for the cure of diseases, and to counteract poisons, etc., a draught of water from a metal cup having certain passages from the Koran, and talismanic characters and figures engraved in the interior, is administered to the patient. Water from the sacred well of Zem-zem in the temple of Mecca, and pieces of the black brocade covering of the Kaba, small

oblong flat cakes of a kind of greyish earth mixed with saliva, supposed to be composed of earth from over Mahomed's grave, are believed to be a cure for every disease. They are sold at the prophet's tomb, and are occasionally eaten. The Chinese have a written charm, praying for the three maays, happiness, long life, and sons; and nine libes, prosperity, dignity, longevity, etc.; koo-tung-king, the old brass mirror, to cure the looker of insanity. The Singhalese believe that certain charms are efficacious in protecting them from the violence of bears.—*Skinner's Overland Journ.* ii. p. 70; *Ward's View of the Hindus*, ii. p. 71; *Milner's Seven Churches of Asia*; *Herklot's Kanoon-i-Islam*; *Tr. Hind.* ii. p. 3.

CHAR-MUGHZ, PERS.; also Girdighan; Jouz-i-roomi. Juglans regia; walnuts.

CHARNOCK, JOB, the founder of Calcutta. In the end of the 17th century he dwelt at Barrackpur, which the natives have named Achunak, after him. He resided there so as to be near the grave of his wife,—a Hindu woman, whom he had espoused after rescuing her from burning on the funeral pile of her deceased husband. The mausoleum over her remains is the oldest piece of masonry in Calcutta. His sorrow for the loss of his wife was unbounded. So long as life lasted, he on the anniversary of her death sacrificed a cock in her mausoleum in the cemetery of St. John's Church. His epitaph—

D. O. M.

Jobus Charnock, Armiger,

Anglus. et nup. in hoc

Regno Bengalensi

Dignissimus Anglorum

Agens,

Mortalitatis sue exuvie

sub hoc marmore deposuit, ut

in spe beate resurrectionis ad

Christi Judicis adventum

obdormirent.

Qui postquam in solo non

suo peregrinatus esset diu,

reversus est domum sue eter-

nitatis decimo die Januarii

1692.

CHAR-PAL. HIND. A sleeping cot or bedstead; literally, four legs.

CHARRAH. ARAB. Jagenaria vulgaris, Sen.

CHARRAS, the gum-resin of the hemp plant, Cannabis sativa. It exudes from the flower heads, and also from the seed when ripe. In the Panjab, when the seed is gathered, the heads are rubbed with the hands, and the charras collected. The finest charras is produced in Yarkand and Kashgar. A kind called garla is much in use, and of this again there are three sorts, surkhla, blangra, and khak. It is brought into the Panjab from Ladakh via Kulu, Kangra, and Kashmir; also from Yarkand and Persia via Peshawur and Dhera Ismail Khan on the western frontier of the Panjab. A small quantity placed in the hookah and smoked, produces almost immediately an intoxicating effect. It seems to have been employed as an intoxicating substance in Asia and Egypt from very early times, and even in medicine in Europe in former times, as Dr. Royle mentions a notice of it in Dale (*Pharmacologia*, i. p. 133) and Murray (*Apparat. Medicaminum*, iv. pp. 608–620). In Central India, the Saugor territory, and Nepal, charras is collected during the hot season.

Men clad in leathern dresses run through the hemp fields, brushing against the plant with all possible violence; the soft resin adheres to the leather, and is subsequently scraped off and kneaded into balls, which sell at from five to six rupees the seer. A still finer kind, the Momia, or waxen churrus, is collected by the hand in Nepal, and sells for nearly double the price of the ordinary kind. In Nepal the leathern attire is dispensed with, and the resin is gathered on the skins of naked coolies. In Persia, it is stated by Mirza Abdul Russie that the churrus is prepared by pressing the resinous plant on coarse cloths, and then scraping it from these and melting it in a pot with a little warm water. The charras of Herat is considered to be the best and most powerful of all the varieties of the drug. It is said also that when the blang leaves are picked off and the stalks remain, the little knots which occur wherever a leaf issues from the stem, are picked and collected as ganja, and these contain much resin. Indian hemp secretes a much larger proportion of resin than is observable in the European plant; but a difference is observed in this point in India between plants grown in the plains and those of the mountains, and also when grown thickly together. The natives plant them wide apart, to enable them to secrete their full powers. In Europe, the thick sowing, and moister, often dull, climate will prevent the due secretion of the peculiar principles of a plant of the Persian region.—*Powell; O'Shaugh.*

CHARRI. **HIND.** The royal or imperial rod, a long staff or javelin, and often placed by Hindu princes on the royal cushion or throne. It is an emblem of authority, and Charri men zor hai—His rod is strong—is meant to indicate that the authority is obeyed.

CHARSA of Ptolemy, the modern Kars.

CHARSA. **HIND.** A huge bucket made of hide, for a well.

CHARSUDDA, a town in the Peshawar valley, near which the Swat river joins the Kabul river.

CHART.

Zeekarten.	DUT.	Pata.	MALAY.
Cartes marines. . . .	FR.	Cartas de marear. . .	PORT.
Seekarten.	GER.	Carta de navegao' . .	
Naqsha.	HIND.	do marear.	SP.
Carte marine.	IT.		

Marine charts of coasts, seas, and oceans.

CHAR-TARA, a musical instrument, literally four-stringed, as the sih-tara is three-stringed.

CHARU. **MALEAL.** A jungle tree which grows to about 40 feet high, and 2 feet in diameter. It is used in building native vessels, particularly for planks, but is not very durable.—*Edge, M. and C.*

CHARU, in Hinduism, one of the five Jagna, who consist of the Bali, Charu, Baswadeva, and Agnihotra.

CHARUKAR, a town in Afghanistan. It was burned 3d October 1842.

CHARUMAR, predial slaves in Malabar, whose name Wilson derives from Chera, in Maleali, the soil. They follow the rule of Maruma-katayam. They are very diminutive, with a very black complexion, and not unfrequently woolly hair.

CHARUNG, a difficult-pass in the Himalaya, in lat. 31° 24' N., and long. 78° 35' E. The crest is 17,348 feet. See Kunawar.

CHARVADAR, in Persia, the chief muleteer

of a caravan, and generally owner of the animals. He employs a certain number of the Ratirchi or mule-drivers as his servants or assistants.

CHARVAKA, a Hindu philosopher who lived about the third century of the Christian era, and founded a school of materialism. The atheistical philosophy which he put forward is called Loka-yata, and its followers Loka-yati. It forms one of the six atheistical systems of philosophy current amongst the eastern Aryan race in India. The other five are the Yogachara, Sidhanta, Wai-bashika, Madhyamika, and Digambara, all full of indeterminate phrases, and containing a jumble of atheism and ethics. The derivation of Charvaka is from Charoo, insinuating, and Vaka, a word. Charvaka, as the founder of the materialistic school of the Hindus, was the Pyrrho and Epicurus of India. The Charvaka system does not recognise the authority of the Vedas. The sect maintain that in this world of continual changes, which is developed out of four principal elements, prosperity is heaven and adversity is hell, and that there is no other heaven or hell besides these conditions. The philosophic speculations as to the nature of the soul and its relation to the Supreme, called the Adwaita, the Dwaita, and the Visishita adwaita, are derived mostly from the views of the three great apostles of the Vedantist school, who flourished in Southern India, viz. Sankaracharya in the ninth century, Ramanuja in the twelfth century, and Madhavacharya a little later.

Dwaita, the doctrine of duality held by many Hindus, distinguishes two principles in creation, spirit and matter, as opposed to the Adwaita or Monad doctrine, which acknowledges the reality of spiritual existence only. Ananda Tirthachari was the founder of the Dwaita school. Sankaracharya was the propagator of the Adwaita doctrines. The Vivishitadwaita school, non-duality with a difference, was founded by Ramanujacharya. It maintains an intermediate doctrine that the universe is a reality depending upon and supported by God, as the body is by the soul; that the divine and human soul are in some respects identical; yet that for all human purposes they are regarded as distinct, and that, in life, the human soul is subordinate and responsible to the divine soul.

CHAR VALAYAT, four territories under Afghanistan, comprising Maemana, Audkhui, Shubbargaum, and Siri pul, with a population of above 250,000.

CHARWAHA, a herdsman, a grazier, of North India.

CHAR-YARI. **HIND.** Char, four, and Yar, a friend. A Sunni Mahomedan who acknowledges Abubakr, Omar, Osman, and Ali as the four legitimate khalifs.

CHAR-ZANOO. **HIND.** Lit., on four knees, i.e. sitting cross-legged.

CHASA, also Apaymm. **SANSK.** Opium. Chasa is said to be derived from Khas khas, poppy seed.

CHASA. A Bengal cultivator. Chasa signifies a cultivator of the ground.

CHASARFO, a yellow earth of Spiti.

CHASHIM. **HIND.** **PERS.** The eye. It is deemed amongst Eastern Mahomedans an organ of the body by which they can swear, possibly originating in the old practice of blinding persons. The Persian expressions 'Ba-chashim' and 'Ba

sar-o-chasm,' also the Hindi words, 'Mere sar aor ank par,' meaning 'Your order be on my eyes,' are usual responses on receipt of an order, and acknowledging that it will be obeyed, on the penalty of the head and eyes. The evil eye is the Chashm-i-bad or Bad chashm of the Mahomedans of Persia and India. Chashm-i-khoras, Abrus precatorius, *Linn.* Chashm-i-maidah, cat's eye; the gem so called. See Evil Eye.

CHASKU. HIND. A cloth dyed with kussum-bha and printed.

CHASMAH-I-BAD, a spring in Khorasan on the road from Astarabad to Damghan. The people believe that if its waters be defiled, a furious wind rages till a tribe of the neighbourhood restore its purity.—*Eastwick; Morier; Fraser; MacGregor.*

CHASNI, a sugar-boiler; syrup of sugar; a vessel for taking out boiled cane juice.

CHASTE TREE, three-leaved, *Vitex trifolia*, *Linn.*; five-leaved, *Vitex negundo*, *Linn.*

CHATA CHARETTA. HIND. *Cicendia hysopifolia*, *Adans.*

CHATAI. HIND. A mat.

CHATANULU, TEL., a sudra sect who worship Vishnu exclusively, and whose occupation is the sale of flowers. This seems to be the race known in the Peninsula as the Satani or Satani-wanlu, followers of Chaitanya.—*Wilson.*

CHATARASI KURA. TEL. *Mollugo spargula*, *L.*; *M. verticillata*, *R.*

CHATERA, an embosser or chaser of silver and gold work; derived from Chitarna, to adorn, embellish.

CHATGARI, a frontier district of British India, situated between Desh Durrung and the Bhutan hills, occupied by the Kachari or Boro; about 30,000 dwell in the Assam valley, and on its N. and S. borders. They have no written character; but a large part of their vocables are identical with those of the Garo, and almost all the rest may be traced to some dialect of the Tibetan. See India.

CHATHULU. TEL. White ants.

CHATIN. BENG. *Alstonia scholaris*.

CHATISGHAR, the south-eastern division of the Central Provinces of British India, comprising the districts of Raipore, Belaspore, and Sambulpore. It lies between long. 80° 30' and 83° 15' E., and lat. 16° 50' and 23° 10' N. It has Bustar on its south. Its population is 206,000. The Chamar race form a fifth part of the population, and have all joined the Satnami sect. See Satnami.

CHATNEY, Chutney, or Chetney, a warm condiment in use in India.

CHATR, an umbrella, a caravansary, cloth covering of a carriage, or ekka canopy. A sun-shade. In the Native States of India, sovereigns grant the right to use the Chatri, sometimes designating its colour; similar grants are made for the palanquin, shawls, naubat, etc.—*W.*

CHATRA. HIND. *Leucas cephalotes*.

CHATR-ANGA, the game of chess, so called from imitating the formation of an army, the four (chatur) bodied (anga) array, of elephants, chariots, horse, and foot, in Indian armies. See Chess; Shatranj.

CHATR-GO-PUTR. HIND. The Knyastha or Kact race, in the Peninsula of India, claim this mythological person as their ancestor. They say he was the secretary to Yama, the god of the infernal regions.

CHATRIWAL. HIND. *Euphorbia helioscopia*.

CHATRIYA, a warrior branch of the Aryan Hindus, taking social rank after the Brahmans. Menu says, 'To defend the people, to give alms, to sacrifice, to read the Vedas, to shun the allurements of sexual gratification; such are in a few words the duties of a Chatriya.' How this martial race broke up is extremely obscure. They were a brave race, and all Rajputs claim a Chatriya descent.

CHATTA-PAT. HIND. Leaf of *Licuala peltata*.

CHATTO. HIND. A canopy of royalty.

CHATTRAM. TAM. Chatrar, HIND. A caravansary, temple, or choultri.—*Wilson.*

CHATTRI. HIND. *Agaricus campestris*.

CHATUR-ANGA-BALAM. TEL. An army of the four arms, horse, foot, elephants, and chariots.

CHATUR-BHUJ, a name of Vishnu with four arms. In a deed of conveyance by Maharao Sri Jey Singh, this deity is invoked. The deed runs thus: 'At this time, Brother Maun Sing, I bestow upon thee, of my own free will, the village and lands of Jaetpoorah. This donative shall not look to rankroos (physical infirmity), su-poot (worthiness), ca-poot (unworthiness); your issue shall enjoy them. Of this intention I call the four-armed divinity (Chatur-bhu) as witness. You are my own child (chooroo); wherever and whenever I order, you will do my service; if you fail, the fault be on your head.'—*Tod's Rajasth.* i. 610.

CHATUR-BHUA DEVI, a form of Durga, represented sitting on a padmasana or lotus seat.

CHATUR-DASI, in Hindu astronomy, the 14th day of the lunar Padasa.

CHATUR-DASI, in the Hindu religion, festivals held on the 13th and 14th of the month Chait, in honour of Kama, the god of love. Madana, he who intoxicates with desire (kama), are both epithets of the god of love. The festivals on the 13th and 14th are called Madana triodasi (thirteenth) and Chatur-dasi (fourteenth). On these days the Rajputs of Udaipur sing hymns handed down by the Bards: 'Hail, god of the flowery bow: hail, warrior with a fish on thy banner! hail, powerful divinity, who causeth the firmness of the sage to forsake him! Glory to Madana, to Kama, the god of gods; to him by whom Brahma, Vishnu, Siva, and Indra are filled with emotions of rapture!' There is no city in the East where the adorations of the sex to Kama-deva are more fervent than in Udaipur, the city of the rising sun.—*Tod's Rajasth.* i. p. 577.

CHATURJEE, properly Chatur padhyaya, the name of a family of Brahmans in Bengal learned in the four Vedas.—*W.*

CHATUR-MASYA. SANSK. Four kinds of sacrifices—Vaiswadeva, Varuna Praghava, Sakamedha, and Sunasiriya, to be offered in four consecutive months, or every four months, consisting of roasted cakes of rice-flour, offered in the first to the Viswadevas, in the second to Varuna, with two figures of sheep made of flour, in the third with vegetables to Agni? and in the fourth to Indra.—*W.*

CHATURTHI, the fourth day after the new and full moon, sacred to Vighnesvara. On the Ganesh Chaturthi, or Chauthi, was born Ganesh, called also Ganapati, made from the turneric and oil off the head of Parvati. He is the god of wisdom, who removes obstacles, and is invoked at the commencement of all undertakings. Ganapati has a man's body with the head of an elephant.

His head is said to have been cut off or destroyed by Siva, when Ganesh tried to prevent Siva entering the chamber of Parvati when bathing. Clay images are made and worshipped for from one to nine days, and then thrown into water. The Chinchor or Chinchwad, who resides at a village of that name near Poona, is believed to be an incarnation of Ganesh, who promised an ascetic named Moroba, who lived in Sivaji's time, that he would be incarnate for seven generations in his family. The earth image of Ganesh is one of three forms, in which the earth deity *Mrittika* is worshipped by Hindus. The first is the *Nag-paucham*, in which feast a snake of clay is worshipped; the second is *Gokul Ashtami*, when a clay image of the infant Krishna is worshipped; and the third occasion is that on which Ganesh is worshipped, and this last day of the worship of *Mrittika* is observed with great pomp. The *valhan* or carriage of Ganesh is a rat. The feast in honour of his birth is held on the 4th of the month *Bladrapad*, and falls on the first days of September, and has some planetary or seasonal connection. Ganesh is brought to the house with much pomp.

CHATURUPADHYAYA. SANSK. The name of a family of Brahmans in Bengal, commonly pronounced *Chaturjia* or *Chaturjee*.

CHATUR-VEDI. SANSK. Meaning a Brahman who has studied the four Vedas. It is usually pronounced *Chaubi*. The term is now applied to a class of Brahmans who are not always of a literary character; and in the Upper Provinces they are usually boxers, wrestlers, and the like.—*Wilson*.

CHAU. HIND. Four. *Chau-bach'ha*, in former times, in the Delhi territory, a levy of revenue on four things, the poll-tax, hearth-money, and *hornegeld*.

Chaulisi (24), any tract containing 24 villages in the occupation of a particular tribe.

Chaurasi (84), a subdivision of a *pargana* embracing 84 villages.

CHAUDA-RATNI, also *Chaturdesa-ratna*, in Hindu mythology, fourteen precious articles, called gems, obtained by churning the ocean. The second incarnation of Vishnu was in the form of a tortoise, hence known as the *Kurma* avatar. The principal incident in it was the churning of the ocean with the huge mountain *Mandara* as a churn-rod, using the great serpent *Sesha* as a churning rope; while Vishnu, in the form of a tortoise, sustained the vast load. The produce was the fourteen precious articles (or gems), the *chaoda-ratni*, or more classically the *chatur desa ratna*, one of which was medicine, another poison. See *Vishnu*.

CHAUDHARI, the headman of a trade in towns; the headman of a village; also, in Hindu temples in the Peninsula, the figures at the corners of the temple supporting each succession of platforms. See *Dhara*.

CHAUGHAN, a game of Tibet resembling hockey, but played on horseback, on a plain about 60 yards broad and 350 long, with a stone pillar at each end as the goal. The ball is somewhat larger than a cricket ball, and is called in Tibetan, *Pulu*, and now known to the British as *Polo*. The stick or *Byntu* is of the strong and straight bough of the almond-tree, about 4 feet long, and let in at the top and passed quite through to the other end of a curved piece of solid birch-wood, about the size and shape of a drenching horn. The game is mentioned by Baker. It is played

in every valley in Little Tibet, Ladakh, Yessen, Chitral. See *Chicane*; *Choughan*.

CHAUHAN, one of the principal Rajput races, descended from *Prithi Raj*, the last Hindu ruler of *Indra-prestha*, or Delhi, and spread through Malwa and Rajasthan. The principal families are the *Khichi*, *Hara*, *Bhadauria*, *Rajkumar*, *Rajor*, *Pratapnir*, *Chakarnagar*, and *Manchana*. The head of the *Manchana* is the raja of *Manipuri*. This was the most valiant of the *Agnicula* Rajputs, and of the whole Rajput race. Its branches (*saca*) long maintained all the vigour of the original stem; and the *Hara*, the *Khihi*, the *Deora*, the *Sonigurra*, and others of the twenty-four, have their names immortalized in the songs of the Bards. The derivation of *Chauhan* is coeval with his fabulous birth,—the four-handed warrior *Chatoor-bhooja*, *Chatoor-baha*, *Vira*. Their name is often written *Chauhān*, also *Chahuman*. They are in every part of the N.W. Provinces, as well as in Malwa and Rajasthan; the chief of this tribe now in the *Raht* district of *Ulwār* claims to be the living representative of *Prithavi Raj*.—*Tod*.

CHAUK. HIND. A market-place.

CHAUKA. HIND. A cleared space in which a Hindu cooks his food or performs any religious ceremony.

CHAU-KALASA. MAHR. A section of the *Sudra*, so named from their having four (*chau*) ornaments (*kalasa*) to the bridegroom's litter in a marriage procession.

CHAUKAT. HIND. A window frame or a door frame.—*Elliot*.

CHAUKI. HIND. A police station. *Chaukidar*, a watchman, policeman. *Chaukidari*, a tax levied to defray the cost of the village watch.

CHAULAI. HIND. *Amarantus mangostanus*. On the hills, *A. polygonoides*, a small-seeded variety of *A. frumentaceus*. *Lal chaulai* is *A. anardana*.

CHAULARYA. NEP. *Borax*.

CHAULMOOGRA. HIND. *Gynocardia odorata*.

CHAU-MUKHA. SANSK. A quadruple image, or four images of a Jaina thirthankara placed back to back.

CHAUNI. HIND. *Cleome pentaphylla*.

CHAUNSI. HIND. *Berchemia*, *sp.*

CHAUPAN PAI, or *Pahal* of Kashmir; shepherds who tend the flocks of other people.

CHAUPAT or *Chausar*. HIND. A game played with dice.

CHAU-PIRA of the Shan race, means lord, ruler. It is the *Tsan-bwa* of the Burmese.

CHAURANÆI SCYTHÆ of Ptolemy, supposed to be the people of Khor, a territory S.E. of *Jadakh*, and eastward of the *Byltæ*.

CHAUR-ANGA. SANSK. Lit. a square altar or pedestal for the *linga*.

CHAURAPUPPOO, *Charul*, also *Chironji*, of Hindustan, is the seed of the *Buchanania latifolia*, removed from the small stone or kernel of the *achhar* or fruit; it is very palatable and nutritious, especially when roasted; is used also in medicine, and considered heating; one seer and a half costs a rupee. The fresh fruit is very agreeable.—*Gien. Med. Top.* p. 131.

CHAURASA. HIND., from *Char*, four, is often applied to square tools. *Chaurasa*, a spiter for making holes in a wire-drawer's plate. *Chauras bira*, a narrow chisel. *Chauras mekh*, a small square anvil; *Chaurasi reti*, a square or two-faced file.

CHAURASI.

CHAURASI or Chouriasi, in Indian land revenue, a common subdivision of a district, comprising 84 villages. Satiassi, or 87 villages, is also not unfrequent.

CHAURI. HIND. A whisk; a flyflapper of hair, or shavings of sandal-wood, or ivory, etc.

CHAUS. *Shar.* Felis chaus, *Gulden.*

CHAUSI. HIND. Broad cotton cloth, the web having 400 threads. Chausuti, plain cotton cloth, four thread. Chautahi, a bed-cover, also used as a wrapper by villagers.

CHAUTH. HIND. An assessment equal to a fourth of the original standard assessment, which the Maharrattas compelled other nationalities in India to pay, as the fee for abstaining from ravaging their countries. They collected it through their own agents. A quarter, a fourth part.—IV.

CHAUTHI. HIND. The ceremony of untying the wedding bracelet on the fourth day after consummation.—IV.

CHAUWAN. HIND. A millet of E. Oudh.

CHAVANAN, low caste Nairs? who are fishermen.—*Wilson.*

CHAVALAPURI KADA. TEL. Andrographis ocheoides, *Nees.*

CHAVANNESIA ESCULENTA, a creeper of Burma; yields caoutchouc. Its girth is 18 inches, and its crown covers an area of 200 square feet.—*Markham; Peruv. Bark.*

CHAVICA BETLE. *Miq.* Betle vine.

Piper betel, Linn.

Pan, . . . BENG., HIND.	Vettilei, . . . TAM.
Ku-ting, . . . CHIN.	Kamneraku, . . . TEL.
Betle leaf pepper, . . . ENG.	Nagabali, . . . "
Vetta, . . . MALEAL.	Tumalapaku, . . . "

This trailing plant is cultivated in many parts of India and through the Archipelago for its leaf (pan), which is used to envelop ingredients—betlenut, quicklime, aromatics, astringents—presented to guests on ceremonial visits. The plant thrives best in a stiff soil. This is well ploughed or dug, thoroughly cleaned and levelled, then enclosed with stakes and brushwood, and covered with a roof of scutth grass, *Saccharum procerum*. Shallow trenches 2 feet wide and 5 or 6 inches deep, and about 5 feet apart, are next scooped out and filled with water, and when the ground is thoroughly saturated the planting begins. A full-grown plant is cut down to the roots, which are separated and laid horizontally, and the sprouts, which in three or four days arise from the joints, each forms a separate plant. Planting goes on from February to April, and each row receives two or three waterings daily. The stripping of the leaves commences about the middle of June, and continues regularly for about a year, when the site is abandoned. The leaves are packed in bundles of 200, called dholi, and the dholi are sold at from 1½ pice to 14 annas per dholi, according to the quality and age of the leaf. Pan plants are grown to protect ferns, caladiums, and other foliage plants from sun and frost. See Betle.

CHAVICA ROXBURGHII. *Miq.*

Piper longum, Linn., long pepper.

Dar-filfil, . . . ARAB.	Chabai jawa, . . . MALAY.
Filfil-u-daraz, AR., PERS.	Tabee, . . . "
Pipul, Pipool, . . . BENG.	Katta terpali, . . . MALEAL.
Pei-khyen, . . . BURM.	Pippuli, . . . SANSK.
Pih-poh, . . . CHIN.	Krishna pippuli, . . . "
Pippuli, . . . DEK.	Tipili, . . . TAM., SINGH.
Pipa mul, . . . HIND.	Pipulu, Pipul, . . . TEL.

This plant is extensively cultivated, but it grows

CHAY ROOT.

wild on the banks of streams in the Circar mountains, S. Konkan, Bengal, Sylhet, and on the banks of the Irawadi. The dried catkins of the female plant form the long pepper of commerce.—*Roxb.; Voigt; Useful Plants.*

CHAWUL. HIND. Husked rice.

CHAWURA or Chaura, a tribe once renowned in the history of India, though its name is now scarcely known, or only retained in the chronicles of the Barda. Of its origin, says Col. Tod, we are in ignorance. It belongs neither to the Solar nor Lunar races. The capital of the Chawura was the insular Deobunder, on the coast of Saurashtra; and the celebrated temple of Somnath, with many others on that coast, dedicated to Balnath, or the sun, is attributed to the tribe of the Sauri, or worshippers of the sun. The Balabhi princes were succeeded in the rule of Gujerat by the Chaura, who finally established their capital, in A.D. 746, at Anhalwara, now Patan, and became one of the greatest dynasties of India. The last raja dying in A.D. 931 without male issue, was succeeded by his son-in-law, a prince of the Rajput tribe of Salonka or Chalukya, whose family were chiefs of Kalian in the Dekhan, above the Ghats.—*Elphinstone's History of India*, i. p. 401; *Tod's Rajasthan*, i. p. 101.

CHAWUT. MALAY. Bark cloth from *Artocarpus elastica*.

CHAWUT. BY. *Chenopodium viride, Roxb.*

CHAYA. JAP. A tea-house.

CHAYA. SANSK. A shadow, from Cha, a covering, or disappearance. See Surya.

CHAYA. BENG. *Zerua lanata, Juss.*

CHAYAU-KA-YOE. BURM. *Amoora rohituka.*

CHAYNDPOLL. TEL. *Trichosanthes cucumerina.*

CHAYROOKA. MALEAL. *Capparis Heyneana.*

CHAY ROOT. ANGLO-TEL.

Emboorel, . . . TAM.	Tsheri velloo, . . . TEL.
Kammissereem vayr, . . . "	Chaya veru, . . . "

This is the root of a small biennial plant, the *Oldenlandia umbellata*, which is largely used as a scarlet dye. It is extensively cultivated in Ceylon and the Peninsula of India, but also grows wild, and the Singhalese prefer the wild plant. The plant grows in light sandy ground near the sea, where its roots strike very deep. The colouring matter resides entirely in the bark of the root, the inner portion being white and useless. This root is of great importance to the S. Indian dyer, yielding a red dye similar to murex, *Rubia cordifolia*. The celebrated red turbans of Madura are dyed with it. That of Madura is considered superior of its kind, but this superiority is probably owing to some chemical effect which the water of the Vigay river has upon it, and not to any peculiar excellence of the dye itself. Wild chay roots are shorter, and are considered to yield one-third or one-fourth more colouring matter than the cultivated root; this probably arises from too much watering, as much rain injures the quality of the root. Roots of two years' growth are preferred when procurable. It is said that chay root rapidly deteriorates by being kept in the hold of a ship, or, indeed, in any dark place. When cultivated, the minute seeds are gathered, together with the surface sand, and sown in land previously prepared. It is watered for a year, and then dug, and sells at Rs. 20 the candy of 500 lbs.

If left longer in the ground it increases in value, and does not require further watching.

When first sown, it is immediately watered with water in which cow-dung has been dissolved. This binds the surface, and prevents the seeds being blown about by the winds. The dyers in the Peninsula of India test the value of the root by mixing some of the pounded root and quicklime. If good, the mixture soon assumes a fine red colour, if the mixture become pale or brown, or if no change of colour take place, it is considered of little or of no value. If a white colour prevail in the inside of the bark and on the wood, it may be pretty certain that the root is spoiled; a green colour is a sure indication of its goodness (Rhode, MSS.). It furnishes the colouring matter for the durable red for which the chintzes of S. India are famous. Chay root forms a considerable article of export from Ceylon. It grows there spontaneously on light, dry, sandy ground on the sea-coast. The cultivated roots are slender, with a few lateral fibres, and from one to two feet long. Attention was drawn to it as a dye-stuff in 1798 by a special minute of the Board of Trade recommending its importation; but Dr. Bancroft's report discouraged its further importation.

Dr. Heyne's description of dyeing cotton yarn with chay root is as follows:—

The yarn, being washed and untwisted, that it may not become entangled, and being so separated that every part may be equally penetrated by the colouring matter, is divided into bundles of thirty or forty threads, through each of which at the middle and extremities a cotton thread is loosely sewed, but so as to allow of every thread being exposed to the sun's rays when hung up, and the threads spread out on a bamboo.

The yarn is washed and cleansed in cold water, aided by half an hour's manipulation; it is then kept in water in covered vessels till it acquires a putrid smell, which takes place in from twenty-four to thirty-six hours, during which it is occasionally pressed and worked for a quarter of an hour together; it is then to be washed as clean as possible, beaten on a stone or earthen pot, and then hung up to dry.

While this process is going on, a lye is prepared of the ashes of the plantain or other tree in cold water. It is an object to have this lye of sufficient strength, which is determined by adding to a small quantity about half as much gingelly oil and giving to it a gentle motion. Should it turn immediately white, having no visible globules of oil swimming on the surface, it is good.

The quantity required of clean lye being poured off and strained, sheep dung, in the proportion of three ounces to a pint of lye, is dissolved in one-half of it, and this solution is again strained. The other half of the lye is mixed with half its bulk of gingelly oil and half as much tsiky (the saponaceous water procured during and retained from former process, being, in fact, a solution of soap in water); the two liquors are then mixed together, and if things are favourable a milky scum arises.

The proportions required for say half a pound of yarn would be,—gingelly oil, half a pint by two pints; tsiky (soapy liquor from former process), a quarter of a pint; sheep dung, two or three ounces.

The yarn having been thoroughly imbued with this mordant, is dried in the sun for some hours; it is then again soaked and dried as before. The same night it is treated with an additional portion of mordant, is put into covered vessels, and allowed to remain till morning. If any mordant remain, the same process is again repeated.

The yarn is at night moistened with the lye first prepared, diluted with one-third of its bulk of water, and put into covered vessels. The yarn in drying, it should be remarked, should have the position constantly changed, to prevent the mordants or lye from accumulating in the lower part.

Next day the yarn is spread out to dry on the bamboo. It is taken in at night, and treated with lye. This alternate soaking or thorough moistening with lye at night and exposure during the day are continued without intermission till the yarn appears saturated with lye, or, in fact, till the oil is converted into soap. This, if the lye is sufficiently strong, may occupy five days. This is ascertained by washing a few inches from off the bundle in water holding some astringent in solution; a whitish scum will arise, and it is from the feeling of this scum when worked between the hands, and the appearance of it afterwards, that they determine the state. The workman being satisfied of the completion of this process, the yarn is again moistened for one day, morning and evening, with much diluted lye or plain water. The yarn may be immediately washed, but the process is much improved by retaining it for some weeks, probably to allow the anamazing matter to get fixed.

Before washing it thoroughly, the yarn is washed in a small quantity of water, which, receiving the soapy particles in solution, is retained by the dyer under the denomination of tsiky. It gradually acquires some consistence and a disagreeable smell. The yarn is then washed in a tank till nothing of the mordant seemingly remains, but the smell and a certain softness to the touch. Occasionally the whole process is again repeated.

The yarn being thus thoroughly impregnated with the mordant, a cold infusion of cassa leaves in water is made, and after some hours the yarn is put into it and handled in such a manner as to expose every thread to its action. It is allowed to remain therein all night. The quantity of leaf used in the infusion is so great that it resembles a paste.

Next morning the water is wrung out from the yarn, the adhering leaves are shaken off, and fresh ones with an equal quantity of chay root substituted; for half a pound of yarn a handful of each is sufficient. After two hours the yarn is laid in the liquor.

The same process is repeated on the third day; by this time the yarn usually changes to a reddish-yellow colour, with occasional red spots. A liquor in which to soak the yarn is now prepared of a handful of chay root in water.

On the fourth day the yarn will appear in the evening of a light red colour. It is to be treated in the same manner as on preceding days, and a similar liquor to the last-named is prepared for soaking it in at night.

On the fifth day the yarn is washed in a tank, and afterwards dried in the sun. As usual, for soaking it in at night, a liquor is prepared of

pounded cassa leaves, mixed with gingelly oil sufficient to form a dry paste, of which about half an ounce is mixed in the usual portion of water; after standing two hours, a handful of chay root is added, and the yarn immediately immersed for the night.

The mode of proceeding on the sixth day is precisely similar, but the liquor for the night is prepared wholly of chay root.

On the seventh day the yarn is again washed, dried, etc. On this and the next day it is immersed in a liquor composed of equal parts of cassa leaves and chay root in water.

The yarn is now boiled in a liquor composed of that strained from it at the last night's process, with the addition of chay root, a handful for half a pound of yarn, and sufficient water to give room to agitate the yarn freely. The pot containing the liquor is placed on the fire, which is kept up briskly till it begins to boil; it is then kept simmering till a rose-coloured froth rises and covers the surface, when the fire is withdrawn, and the pot with its contents allowed to cool gradually. During the boiling the contents of the pot are stirred quickly, so as to expose the yarn as little as possible to the action of the air. When cold, the yarn is taken out and washed in a tank, beaten as usual, and dried in the sun; its colour should be a bright and lively red. If it fail, it is occasionally brightened by steeping once more in a liquor composed with cassa leaves and chay root, the former being mixed first with a little gingelly oil. A temporary brilliancy is further given by putting it in a cold infusion of safar wood.—*Rohde; M. E. J. R.; Simmonds.* See Dyes.

CHAYRUKA. MALEAL. *Capparis Heyneana.*

CHE-ANA, literally six annas, a clan of the Garo, who are rated at six annas.

CHEAYTI. BENG. *Agathotes cherayta.*

CHEBULIC MYROBALAN. Six kinds of chebulic myrobalans are used in India, all known as Halileh:—

H.-i-Zira, is the fruit dried when just formed, and the size of a cumin seed or Zira.

H.-i-Javi, the fruit dried when the size of a Jao or barley-corn.

H.-i-Zingi, the fruit dried when of a larger size, and black like a Negro.

H.-i-Chini, larger than H.-i-Zingi, and greenish.

H.-i-Asfar, the fruit near maturity, and yellow.

H.-i-Kabuli, the fruit at full maturity. Mature Kabul myrobalans sell for a rupee apiece in the Bombay market, under the name of Sarwar-i-Hindi.

CHECHAR. HIND. *Rhus buckiamela.*

CHECHER, under the Mahomedan system of land-tax, lands which had suffered from inundation or excessive rains, the rent of which was remitted for five or six years. See Khiraj.

CHEDA. PERS. A funeral pillar erected by the Brahui nomades, modern representations of the ancient Buddhist chod'ten or chaitya. They are, like the cairns or tsalai of the Afghans, piled over the graves of their holy men and martyrs.—*Bellev.*

CHEDARASI. TEL. *Mollugo spargula, L.*

CHEDDI or Cherri. TAM. A tree, a plant.

CHEDDUI. TAM. The charakh puja.

CHEDDUIU. TEL. White ants.

CHEDI, a kingdom in Saurashtra to which

Krishna resorted, once as a fugitive, and again as a conqueror. See Krishna.

CHEDUBA, a moderately high island, extending from lat. 18° 40' to 18° 56' N., its greatest breadth being almost 15 miles. Its N. peak is in long. 98° 31' E. Area, 120 square miles. It is a volcanic island, lies off Arakan, and is about 1760 feet high; it was lifted 10 feet up about the year A.D. 1750. Population in 1872, 22,078. Petroleum is found in several parts of the island; and at the N.W. corner is a site, known as the volcano, from which issues an inflammable gas. The neighbouring seas of Cheduba and Ramree need careful navigation. Hallstead gives an account of it in *Bl. As. Trans.*, 1841, x. p. 350. It was taken from the Burmese on the 27th May 1854.—*Horsburgh; Dr. Baist; Imp. Gaz.*

CHEDU BADDU DUMPA. TEL. *Dioscorea pulchella, R. iii.* 801. The name signifies 'bitter climbing tuber.' Not uncommon in the forests of the Manyan lands, in the hill country of Vizagapatam and Ganjam. Chedu bira, *Luffa amara, R. iii.* Chedu potla, *Trichosanthes cucumerina, L.*

CHEEHÉE, a Gujar tribe.

CHEEL, also Cheer. HIND. *Pinus longifolia.* Plentiful on the lower hills of the Himalaya; its upper limit is 6000 feet.—*Captain Gervard.*

CHEEL. HIND. A kite. The word is applied to the Haliastur Indus, which is called the Sankar cheel, or Siva's kite, and is known to Europeans as the Brahmany kite; also name of the *Milvus* ater or common kite of India, Malayana, and E. of Europe.

CHEENA. BENG., HIND. *Panicum miliaceum.*

CHEENAPU. TAM. *Lagerstramia Indica, Linn.*

CHEE-NEB. BURM. This tree, of maximum girth 4 cubits, and maximum length 22½ feet, is abundant in Tavoy and Mergui. When seasoned it sinks in water. The flowers have an intolerably fetid, sickening smell, hence its name. It is used by the Burmese for boxes, tables, etc., and is a long-fibred, tough wood when new, but rots readily.—*Captain Dance.*

CHEENEH, a subdivision of the Jat race in the Panjab. See Jat.

CHEEP. GUA. Mother-of-pearl shell; a corruption of the Persian sippi, any shell or mollusc.

CHEER, a pheasant of the Himalaya, also called Charir; *Phasianus Wallichii.*

CHEERA MELLA. HIND. *Phyllanthus longifolius.*

CHEERI. SANSK. *Mimusops hexandra*; also *Wrightia antidysenterica.*

CHEERONJI. HIND. *Buchanania latifolia.*

Its Oil.

Charuli ka tel, . . . HIND. | Sare pappu nuna, . . . TEL.
Sare pappu yennai, . . . TAM.

The kernels of the fruit are eaten by the natives of India to promote fatness; they abound in a straw-coloured, sweet-tasted, and limpid oil, which is seldom extracted. The tree grows plentifully.—*Mad. Ex. Jur. Rep.*

CHEESE.

Ju-fu, Niu-nai-ping, CHIN.	Casew, LAT.
Ju-ping, Tsiang-shwui, . .	Keju, MALAY.
Kiam, DUT.	Queijo, PORT.
Fromage, FR.	Sur, RUS.
Kase, GER.	Queco, SP.
Panir, GUJ., HIND.	Junnu katti, TAM.
Formaggio, Cacio, . . . IT.	Junnu gedda, TEL.

Cheese is made by the natives of India, but that used by Europeans is imported, and is known in

the market by names derived from the places of manufacture, such as single and double Gloucester, Stilton, Cheddar, Dunlop, Dutch, Cheshire, etc. Cheese is made from milk in China, also from a mixture of cream and butter, and called tsiang-shwui. In Britain the chief season for cheese-making is from May to September, and it is carried on in nearly every county; but particular districts have acquired great repute. In Cheshire cheese, the salt is well mixed with the curd, and not merely rubbed on the outside. This, which is the most celebrated English cheese, is made in quantities amounting to nearly 14,000 tons annually. The average annual produce of cheese in Great Britain and Ireland is 80,000 tons, most of which is made in Cheshire, Gloucestershire, Shropshire, and Derbyshire. The rich cheese called Stilton is made in Leicestershire; it is not sufficiently mellow for use under two years old. Double and single Gloucester cheese is also well known. The former is made of the milk and cream, the latter of the milk and half the cream. Bath and York are famous for cream cheeses. Good cheeses are produced in large quantities in Holland. In Gouda cheese, which is considered the best in that country, muriatic acid is used instead of rennet. Hence it is never infested with mites. Parmesan cheese from Parma, in Italy, is skim-milk cheese, owing its rich flavour simply to the fine herbage on the banks of the river Po. Swiss cheese, especially that of Gruyère, is pleasing to some tastes. It is flavoured with herbs.—*Tomlinson*, p. 359; *Faulkner*; *McCulloch's Commercial Dictionary*, p. 271; *Statist. of Commerce*.

CHEESE-MACARONI, Ju-sien, CHINESE, is made by the Chinese.

CHEETA. HIND. The several leopards and panthers of India are so named. The word, meaning spotted, is so used by the natives of India, but they prefix another word to indicate the particular animal intended. Generally, by the word cheeta is meant the *Felis leopardus*, *Schreb.* The *F. pardus* is called the tendwa, also chita and chita-bag; it is the larger cheeta or pard or panther, and the hunting leopard the shikari cheeta. The black or kala cheeta is supposed by some to be a variety of the *F. pardus*. The smaller variety, the leopard, is the gorbacha or bor-bacha, or bibia-bag. The hunting leopard, the *Felis jubata*, is carried to the field on a flat-topped cart without sides, drawn by two bullocks. Each animal has two attendants, and is loosely bound by a collar and rope to the back of the vehicle, but is also held by the keepers by a strap round the loins. A leathern hood covers their eyes. By skilful management the cart approaches within two hundred yards of the game. The cheeta is then unhooded and loosed from its bonds, and it drops quietly off the cart. It approaches them at a slow, crouching canter, masking itself by every bush and inequality of ground. As soon, however, as they begin to show alarm, he quickens his pace, and is in the midst of the herd in a few bounds, rolls over the one he fixes on, and in an instant is sucking the life-blood from its throat. The instant that the deer is pulled down, a keeper runs up, hoods the cheeta, cuts the victim's throat, and, receiving some of the blood in a wooden ladle, thrusts it under the leopard's nose. The antelope is then dragged away and placed in a receptacle under

the cart, while the cheeta is rewarded with a leg for his success. Jerdon regards as one species the three cheetas of India, viz. the two varieties of *Felis pardus*, the panther and the leopard; also the black cheeta or black leopard, *Felis melas*, *Peron*. The hunting leopard or shikari cheeta is the maned leopard, *Felis jubata*, the pard of the ancients.—*Schreder*; *Mundy's Sketches in India*.

CHEETA-MEENA, a branch of the Meena race, from whom spring the Mair or Mera clan, the mountaineers of Rajputana, one of the aboriginal races of India, whose country is styled Mairwara, or 'the region of hills.' The Mair branch of the Meena is also called Mairote and Mairawut. Mairwara is that portion of the Aravalli chain between Komulmir and Ajmir, a space of about 90 miles in length, and varying in breadth from 6 to 20. Rajputana rises from 3000 to 4000 feet above the level of the sea. Mera is 'a mountain' in Sanskrit; Mairawut and Mairote, 'of or belonging to the mountain'; the name of the Albanian mountaineer, Mainote, has the same signification. The Meena race consists of as many branches as their conquerors, the Rajputs. All these wild races have the vanity to mingle their pedigree with that of their conquerors, though in doing so they stigmatize themselves. The Cheeta-Meena accordingly claim descent from a grandson of the last Chauhan emperor of Delhi. Unail and Anoop were the sons of Lakha, the nephew of the Chauhan king. The cocoanut was sent from Jeysulmir, offering princesses of that house in marriage, but an investigation into their maternal ancestry disclosed that they were the issue of a Meena concubine, and their birth being thus revealed, they became exiles from Ajmir, and associates with their maternal relatives. Unail espoused the daughter of a Meena chieftain, by whom he had Cheeta, whose descendants enjoy almost a monopoly of power in Mairwara. The sons of Cheeta, who occupied the northern frontier near Ajmir, became Mahomedans about the 15th century, when Doodha, the sixteenth from the founder of the race, was created Dawad Khan by the hakim of Ajmir; and as Athoon was his residence, the 'Khan of Athoon' signified the chief of the Mairotes. Athoon is still the chief town of the Mair race. Chang, Jhak, and Rajosi are the principal towns adjoining Athoon. Anoop also took a Meena wife, by whom he had Burrar, whose descendants have continued true to their original tenets. Their chief places are Burrar, Bairawara, Mundilla, etc. The Meena were always notorious for their lawless habits; and importance has been attached to them so far back as the period of Beesildeo, the celebrated prince of Ajmir, whom the Bard Chand states to have reduced them to submission, making them carry water in the streets of Ajmir. Like all mountaineers, they break out whenever the hands of power are feeble. In the autumn of 1882 the Meena committed a cruel outrage in the Jeypore territory.—*Tod's Rajasthan*, i. p. 681.

CHEETOO, a famous Pindari chief of the early part of the 19th century, who would not yield to the British, but sought refuge in forests, where he was deserted by all his followers. His mangled body was at length found in a tiger's lair, with his sword, and a letter-case holding some important papers.—*Heber*, ii. 551.

CHEETUL. HIND. The spotted deer. *Axis maculatus*.

CHEETZ. MAHR. *Tamarindus Indica*, *Linn.*

CIEGA. TEL. *Sansevieria Roxburghiana*.

CIEGA GADDA. TEL. *Vauqueria spinosa*.

CHEGO, a race in Malabar, who seem to be noticed by Wilson as the Chegavan or Chekavan, and whom he describes as a man of low caste, commonly a Tair, one whose occupation is drawing toddy. The tradition is that the Chego came originally from Ceylon, where they belonged to the military caste. The Chego say that in the time of Cheram Perumal, a washerwoman, whose house adjoined that of an Ajari (carpenter), being occupied as usual in washing a cloth in water mixed with ashes, and having no one at hand to hold the other end of it, called to a young daughter of the Ajari, who was alone in the house, to assist her. The child, not knowing that this was an infringement of the laws of her caste, did as she was requested, and then went home. The washerwoman was emboldened by this affair to enter the Ajari's house a few days afterwards, and upon the latter demanding angrily how she dared to cross his threshold, the woman answered scornfully that he belonged now to the same caste as she did, since her daughter had helped to hold her cloth. The Ajari, learning the disgrace that had befallen him, killed the washerwoman. Upon this her friends complained to Cheram Perumal, who espoused their cause, and threatened the carpenters, whereupon the latter combined together to take refuge in Ceylon, where they were favourably received by the king of Kandy. Cheram Perumal begged the king of Kandy to send them back, promising to do them no injury. The Ajari did not place entire confidence in these promises, but asked the king to send with them two Chego and their wives, to witness Cheram Perumal's conduct towards them, and to protect them. The king granted their request, with the stipulation that on all occasions, such as weddings and deaths and other ceremonies, the Ajari should bestow three measures of rice on each of these Chego and their descendants, as a tribute for this protection,—a custom which still exists. If the Ajari is too poor to afford the outlay, he is still obliged to present the requisite quantity of rice, which is then given back to him again,—the rights of the Chego being thus maintained. From these two couples all the Chego of Malabar are said to be descended. This caste comes next below that of the Sudra, but is considered much less honourable. In times of civil war or rebellion, the Chego are bound to take up arms for the lawful sovereign; and some princes employed them as soldiers on other occasions, if they had not a sufficient force of Nairs. Their principal occupation is that of drawing cocoanut toddy, which is compulsory on their caste. The Chego are subdivided into two castes, the Chego and the Tuen Chego.

CHEHAL TAN, properly Chahal Tan. Near the Jahan Numa, in Shiraz, is a building called Chahal Tan, 'the forty bodies or persons;' another the Haft Tan, or 'seven persons,' from the number of holy men there buried.—*Ouseley's Travels*.

CHEH'L-WASTI, or captain of forty, amongst the Nasiri, a nomade race who occupy the Tohti and Hotuki countries in summer, and the Daman or skirts of the Suliman range in winter. In

their migrations, they appoint a cheh'l wasti, or captain of forty, and a director-general.

CIEHOOR. BENG. A pale brownish-coloured cordage of Birbhum, coarse, and of moderate strength.—*Royce*.

CHEIRANTHUS ANNUUS. Linn.

Na-farmani, . . . **HIND.** | *Todri safaid*, . . . **HIND.**

The natives of India recognise five kinds of seed, which they distinguish by their flowers. Lab or surkh, red, and zard, yellow, appear to be wallflower seeds. Safaid (white), nafarmani, and nila (blue), are stock seeds.—*Powell's Handbook*.

CHEIRANTHUS CHEIRI, wallflower, from Cheir, the hand, and Anthos, a flower, derives its English name from growing wild on old walls and ruins in England. It is of a light yellow colour, but, when cultivated in gardens, assumes a rich dark tint, mixed with brown; the double variety of a yellow colour, and striped with deep orange. In the Panjab it is called Lahori subu. It has small linear, acute, reddish seeds (*todri surkh*, *lal todri*), and the flowers said to be cordine and emenagogue, are used in paralysis.—*Powell*.

CHEIRONECTES, the frog-fish of the British, in India, belong to the family of Lophiadae or anglers, and are met with in many seas. In this group the bones of the carpus form arms that support the pectoral fins, and enable these fishes to walk along the moist ground, almost like quadrupeds. *Cheironectes immaculatus*, *Ruppell*, has feet or claws rather than fins. Hartwig mentions a frog-fish of the Asiatic islands and the southern hemisphere, remarkable for its hideous appearance and its capability of surviving for several days on land.—*Tennent's Ceylon*, p. 330. See Fishes.

CHEIROPTERA, the bats.

<i>Chauve souris</i> , . . .	FR.	<i>Nottoli</i> ,	IT.
<i>Fledermauser</i> , . . .	GER.	<i>Vespertilionces</i> , . .	LAT.
<i>Gadhul</i> ,	HIND.	<i>Shub-para</i> , . . .	PERS.
<i>Pipistrelli</i> ,	IT.	<i>Trinjan</i> ,	TAM.

A sub-order of mammals of the order Primates. The bats, or flitter nice, derive their scientific name from the two Greek words, Cheir, a hand, and Pteron, a wing, from the circumstance that a membranous fold of their skin, commencing from their neck, spreads out between their fore feet and their fingers. They include four families, viz.,

Fam. Pteropidae, Frugivorous bats.
3 Gen.—*Pteropus*, 4 species; *Cynopterus*, 2 species; *Macroglossus*, 1 species.

Fam. Vampyridae, Vampiro bats. *Sub-Fam. Megadermatinae*.

1 Gen.—*Megaderma*, 4 species.

Sub-Fam. Rhinolophinae.

5 Gen.—*Rhinolophus*, 11? species; *Hipposideros*, 10 species; *Callops*, 1 species; *Rhinopoma*, 1 species; *Nycteris*, 1 species.

Fam. Noctilionidae. Sub-Fam. Taphozoinae.

1 Gen.—*Taphozous*, 5 species.

Sub-Fam. Noctilioninae.

2 Gen.—*Nyctinomus*, 1 species; *Cheiromeles*, 1 species.

Fam. Vespertilionidae. Sub-Fam. Scotophilinae.

3 Gen.—*Scotophilus*, 11 species; *Nootulinia*, 1 species; *Nycticejus*, 8 species.

Sub-Fam. Vespertilioninae.

8 Gen.—*Lasiurus*, 1 species; *Murina*, 2 species; *Kerivoula*, 5 species; *Vespertilio*, 7 species; *Myotis*, 6 species; *Plecotus*, 3 species; *Barbastellus*, 3 species; *Nyctophilus*, 1 species.

Some of the frugivorous bats are eaten in the East. The Indian fruit-bats are *Pteropus Edwardsi* and *Pt. Leschenaultii*; that of Australia, *Pt. poliocephalus*; and *Cynonycteris collaris* is the collared fruit-bat.

CHEITUN, a Brahman of Naddiya, who in the

beginning of the 16th century introduced the reforms of Ramanand into Bengal.

CHEKAVAN or *Chegavan*. **MAL.** A toddy-drawer in Malabar.—*Wilson*. See *Chego*.

CHE-KIANG, a province on the east of China, of 57,000 square miles. It is washed by the China Sea. Its chief towns are Hang-chau, Ningpo, and Wan-chau.

CHE-KIANG RIVER, or Pearl river, disembogues after a course of 500 miles. As it passes Canton, it divides into two branches, which, embracing the island of Honan and the Flat islands, re-unite below the Flat islands to form the true Pearl river, which flows on in a broad stream, receives many tributaries, and finally empties itself by many mouths into the sea below the Boguo Forts. It drains 150,000 square miles. The channels are narrow, but most of them are navigable by boats to all the large towns in the provinces of Kwang-tung and Kiang-si.

CHEKONADI. **TEL.** *Cadaba Indica*, *Lam.*

CHEKURTI TIVVA. **TEL.** *Pentatropis microphylla*, *R. ii.* 35.

CHEL. **HIND.** *Cannabis sativa*.

CHELA. **HIND.** *Alangium decapetalum*.

CHELAH means literally an adopted dependent. It neither applies to a slave nor an adopted child, but to a person who is admitted to the claims of a dependent relation. In use, it means a disciple, a pupil, a slave. *Tod* (ii. 608) says it includes servitude or domestic slavery, but implies at the same time treatment as a child of the family, or disciple. *Tod* mentions that at Bhynsrur the head of the establishment came forth to bestow his blessing on him and to beg something for his order. He, however, in the first place elected Colonel *Tod* one of his chela, or disciples, by marking his forehead with a tika of bhāboot, which he took from a platter made of dhak leaves.—*Tod's Travels*; *Malcolm*, *Central India*.

CHELAT-PIPPUL. **BENG.** *Stillingia sebifera*.

CHELIDONUM MAJUS. *Smith*.

Chi-mu, . . . **CHIN.** *Celandine*, . . . **ENG.**

It is used as an expectorant.

CHELIFER. Amongst the insects which infest books in India are two genera, which are usually regarded as accomplices in the work of destruction, but which, on the contrary, pursue and greedily feed on the larvæ of the death-watch and the numerous acari which are believed to be the chief depredators that prey upon books. One of these malignant genera is a tiny tailless scorpion (*Chelifer*), of which three species have been noticed in Ceylon, the *Ch. librorum*, *Temp.*, *Ch. oblongum*, *Temp.*, and *Ch. acaroides*, *Hermann*, the last of which it is believed had been introduced from Europe in Dutch and Portuguese books. Another genus of book insects is the *Lepisma*, the fish insect genus, and called so by Fabricius from its fish-like scales,—tiny silvery creatures which feast on the acari and soft-bodied insects that infest books. There have only been two species described, viz. the *L. niveofasciatus* and *L. niger*, *Temp.* It has six legs.

CHE-LING-TCHA-POO, a division of the country of the Kalkas, in the district of Pola, adjoining the Russian district Selingsky.

CHELKA DUDUGA. **TEL.** *Unona discolor*.

CHELLAWN, **HIND.**, properly *Chilān*. An invoice, a passport, from *Chilān*, to forward.

CHELLU. **TAM.** Termites, white ants.

CHELLUMBRUM, a town in S. Arcot district,

famous amongst Saiva Hindus for its shrine, called Sabanaiker Koil, to which pilgrims repair. It was built by one of the kings of Chola Mundalum. The Hindus of Ceylon and the Nattu Kotta merchants of Madura contribute largely to its support. The single blocks of granite in the gateway and roof are each 30 feet long and 5 feet square. In one part there is a roof supported by 1000 solid granite columns; and the lights from the Gopuram, 122 feet high, can be seen at sea 10 miles distant.

CHEL-MAR-ZAI, one of the four divisions of the Med, a seafaring and fishing population on the seaports of the Makran coast; the other three divisions are Guzbur, Hormari, and Jellar-zai.

CHELMERI. **HIND.** *Cicca disticha*.

CHELMON ROSTRATUS. *Linn.* One of the archer fishes. *Chatodon rostratus*, *Shaw*, according to Sir J. E. Tennent, is the archer fish of the fresh waters of India. On seeing a fly settle overhead on a leaf, it propels a drop of water and brings it down. See *Chatodon toxotes*.

CHELONIA, an order of reptiles, known as tortoises and turtles, generally considered the first by zoologists. They are also termed *Testudinata*, from *testudo*, the Latin for a tortoise. They belong to the section *Cataphracta* or shielded reptiles; and the families, genera, and species in S.E. Asia are as under:—

SUB-CLASS, REPTILIA PROPER.

The Order of Tortoises—Chelonia.

1. Land Tortoises, Testudinidæ.

Testudo elegans, *Schöppf.*, Peninsula of India, Ceylon.

T. Horsfieldii, *Gray*, Afghanistan.

T. elongata, *Blyth*, Gamboja, Arakan, Mergui.

T. Indica, *Gmel.*, Galapagos.

T. radiata, *Shaw*, Madagascar.

T. stellata, " Vizagapatam.

T. platynotus, *Blyth*, Burma.

11. Freshwater Tortoises, Emydidæ.

Manouria emys, *M. and Sch.*, Penang, Arakan, Tenasserim.

Cuora Amboinensis, *Daud.*, Eastern India.

C. flavomarginata, *Gray*, China, Formosa.

C. trifasciata, " China.

Cyclemys Oldhami, " Mergui, Gamboja.

Ptychocheilus Mouhotii, " Cochinchina.

Notochelys platynota, " Singapore.

Geococcyx spinosa, " Tenasserim, Pegu.

G. grandis, " Gamboja.

G. tricarinata, *Blyth*, Chybaasa.

Emys ocellata, *D. and B.*, Tenasserim, Pegu.

E. bealii, *Gray*, Southern China.

E. Thurgii, " Bengal, Penang.

E. mutica, *Cantor*, Chusan.

E. nigricans, *Gray*, Southern China.

E. nuchalis, *Blyth*, Java.

E. nigra, *Blyth*, Tenasserim.

E. sebæ.

E. Sinensis, *Gray*, Canton, Formosa.

E. crassicolis, " Mergui, Malay Peninsula, Gamboja.

E. Reevesii, " Cochinchina, S. China.

E. trijuga, *Schweigg.*, Peninsula of India, Ceylon.

E. macrocephala, *Gray*, Siam, Gamboja.

E. Hamiltonii, " Lower Ganges.

Pangshura tecta, " "

P. tentoria, " Dekhan, Indus.

P. flaviventer, *Gthr.*, Bengal?

P. Smithii, *Gray*, Panjab?

Batagur baska, *Gray*, Ganges, Irawadi, Penang.

B. Thurgii, " Central India.

B. Berdmerei, *Blyth*, Pegu.

B. ocellata, *Dunn*, Calcutta.

B. trivittata, " Moulmein.

B. lineatus, *Gray*, Nepal, Moulmein.

B. Ellioti, " Kistna river.

B. affinis, *Cantor*, Malay Peninsula.

B. dhongoka, *Gray*, Nepal, Assam.

Platysternum megacephalum, *Gray*, China, Pegu.

III. Freshwater Turtles, Trionycidae.

Emyda granosa, Schöppf., Hindustan, Sikkim, Bengal.
E. Ceylonensis, Gray, Ceylon.
E. vittata, Peters, Goa.
Trionyx Sinensis, Weig., China, Chusan, Formosa.
T. Gangeticus, Cuv., Ganges, Penang.
T. Javanicus, Schlegel, Ganges, Dekhan, Penang.
T. ornatus, Gray, Siam, Gamboja.
T. subplanus, Schlegel, Singapore, Penang.
T. Guntheri, Gray.
Ohitra Indica, „, Ganges, Malay Peninsula.

IV. Marine Turtles, Chelonidae.

Caouana olivacea, Eschsch., coasts.
Chelonia virgata, Flem., coasts.
C. midas, Sch., Bay of Bengal.
Caretta squamata, L., coasts.
C. imbricata, Sch., Bay of Bengal.
Dermatochelys coriacea, L., coasts.

Chelonia midas is the green turtle; *Caretta imbricata*, hawksbill turtle; *Caouana olivacea*, loggerhead turtle. As an article of food, the green turtles (*Tortues Franches* of the French) are so highly prized that they have become a considerable article of commerce. The fat of many species, when fresh, is used with success in lieu of butter and oil in cookery; and, in those kinds which have a musky odour (*Chelonia*, *Caouana*, and *C. caretta*, for instance), is used for embrocations, leather-dressing, and as lamp-oil. The imbricated turtles furnish that valuable article, tortoiseshell, or rather the best sorts of it, so highly prized in ancient and modern times, and so ornamental and useful in the arts. The eggs of all species, particularly those of the green turtles, are excellent. Chelonophagi inhabited the shores of India and the Red Sea, as Strabo and Pliny testify. They used the shells of the turtles which they caught, for roofs for their houses and boats. The largest shell seen in modern times was 7 feet.—*Yule's Cathay*; *Eng. Cyc.* pp. 1004-1007. See Reptiles.

CHEMA KURA, also Chama dumpa. TEL. *Colocasia antiquorum*, Schott.

CHIEMANTI. TEL. *Chrysanthemum Roxburghii*, Desf.

CHEMBADI-VADU. TEL. A fisherman.

CHEMBAGA-NOVEL. TAM. *Eugenia jambosa*.

CHEMBRUMBAKAM, a large tank or reservoir about 14 miles from Madras. It was originally formed by the native rulers, and held from 55-61 to 77-80 millions of cubic yards of water, and had an area of 4648 acres, or 7-26 square miles. The British in the 19th century enlarged the head sluice and supply channel with the intention of making the reservoir hold 196-87 millions of cubic yards; but its present capacity is 102-91 millions of cubic yards, and the water spread 57-29 acres, or 8-95 square miles.

CHEMBU NARINGI. MALEAL. *Indigofera enneaphylla*.

CHEMISTRY, Kimia, ARAB., was largely cultivated by the Arabs, and, after their conquest of Egypt, it spread over the old world. The most celebrated alchemists of Europe were Albertus Magnus, Roger Bacon, Raymond Lully, Arnoldus de Villa Nova, John Isaac Hollandus, Basil Valentine, Paracelsus, and Van Helmont.

CHEMMAN. MALEAL. A carrier. See Chamar.

CHEMMANUTHI. TAM. *Sethia Indica*.

CHEM-MARA. MAL. *Amoora rohituka*.

CHEMPAKAM. MAL. *Michelia champac*, Linn.

CHEMRI. HIND. *Eleusine flagellifera*.

CHEMUDU. TEL. *Euphorbia tirucalli*, L. *E. cutteamundu*. See Cutteamundoo.

CHEMULA or Chemuda, the Semylla of Greek writers.

CHENA. HIND. *Panicum miliaceum*. It is sown and reaped in the hot season after all the rabi crops have been cut. It needs much water, hence the saying—

'Chena ji ka lona,
 Choudah pani dena,
 Byar chale to, na lona na dena.'

To get the chena crop, water it fourteen times. If a blast strike it, then neither harvesting nor selling. It is a very precarious crop.—*Elliot*.

CHENAB, next to the Sutlej, is the largest of the five great rivers of the Panjab. It is also called the Trimab. Ptolemy called it Sindabal or Sandabilis, but the Greek historians of Alexander called it Akesines. Its source is in the high land of Tibet, about lat. 32° 50' N., and long. 77° 40' E., near the Bara Lacha pass. The Chandra and Bhaga rise on opposite sides of the Bara Lacha pass, which is in lat. 32° 45' N., and long. 77° 22' E.; and as their junction form the Chenab, they give also its Sanskrit name, Chandrabhaga, or moon garden. It runs north-west to Murumurdun; south-west to its confluence with the Jhelum, thence south-west to the Ghara, or continuation of the Sutlej. Its length to the Ghara is 765 miles. It descends at the average rate of 40 feet per mile for the first 200 miles. Its estimated elevation at Kishtawar is 5000 feet. It receives the Suruj Bhagu, Murumurdun, and the Dhark, all short streams. It becomes navigable for timber rafts at Aknur. Above Darwas it is a rapid river, running through a deep rocky channel.

The portion of it which passes through the territories of the maharaja of Kashmir is about 200 miles long. From the junction of the Chandra and Bhaga at Tandi, in British Lahul, to Aknur, where the river debouches upon the plains, its length is about 300 miles. The fall, according to General A. Cunningham, is 34 feet per mile from Tandi to Kishtawar, and 26 feet per mile from Kishtawar to Aknur. The flora of the upper valley agrees in most respects with that of Kunawar; lower down there is an approach to the vegetation of the Outer Himalaya. In the basins of the Chenab and Jhelum are four distinct races, but all of Aryan origin, viz. the Dogra, Pahari, Kashmiri, and Chaibati. The races on its valley call it Sanda Bhaga, Jenab, Ghenab, Jennal, and Ghenal.—*Powell*, 532; *Thomson's Tr.* 348; *Cleghorn*, *Rep.* 134, 153; *Panjah*, i. 10, 11.

CHENA CULTIVATION. ANGLO-SINGH. In Ceylon, Chena means scrub land, patches of forest, burned, cleared, and cultivated for two or three years, and then abandoned and allowed to become forest lands again. This destructive form of cultivation is known as Kumari on the western coast of India.—*Tennent*; *Dr. Cleghorn*. See Kumari.

CHENA-GHANRI. BENG. *Xyris Indica*.

CHENEBROON, a large tree of Akyab used in house-building; plentiful in the Ramree and Sandoway districts.—*Cal. Cat. Ex.* 1862.

CHENK PURI, also Thungon-Puri. BURM. The elytra or wing-cases of the genus *Buprestis*, order Coleoptera. See Beetles. They are used for ornamenting the dress and person; 5000 maunds procurable during the rains. Price in Akyab, from 6 to 7 rupees per maund.

CHENNA, also Chinna. TAM. Small. Many towns seem to be called from this word.

CHENNA. HIND. *Cicer arietinum*, *Linn.* This is called Bengal gram, in contradistinction to Koolti or Madras gram, *Dolichos uniflorus*. Properly Channa.

CHENNANGI. TEL. *Lagerstroemia macrocarpa*, *R.*, and *L. parviflora*, *R.* ii. 505.

CHENNAPPA NAYAKKAR, father-in-law of the Nayakkar of Chingleput, a petty local chieftain; a feudatory of the Chandragiri raja, from whom the English obtained possession of a little fort on the coast, which they converted into a fortified factory, and it became the fortress and town of Madras, which is known to the native inhabitants as Chenapatan.

CHENNAT NAIR, a forest near Palghat, with well-grown *Terminalia glabra*, *Pterocarpus marsupium*, and *Inga xylocarpa* trees.

CHENOPODIACEÆ, the goosefoot tribe of plants, many species of which occur in the S. and S.E. of Asia, of the genera *chenopodium*, *beta*, *blitum*, *salicornia*, *spinacia*, *basella*, *salsola*, and *atriplex*. Several species are used for culinary purposes. Garden orach (*atriplex*), chard-beet, beet, mangold wurzel (*beta*) belong to this order, and soda is obtained from species of *salsola* and *salicornia*. *Ch. album* (*beta* sag), common in Bengal, is used by the natives as a pot herb; *Ch. laciniatum*, an erect annual, and *Ch. viride*, of which there are two varieties. *Ch. olidum*, stinking goosefoot, smells like putrid salt fish, and exhales ammoniacal gas. It is employed as an emenagogue and antispasmodic.—*O'Sh.* p. 523; *Voigt*.

Chenopodium album, *Linn.*

Kulf,	ARAB.	Ructanala,	SANSK.
Khuljeh ke baji,	DUKH.	Parupu kire,	TAM.
Bhatwa, Bathu,	HIND.	Pappu kura,	TEL.
Bathu,	PANJ.	Chakra varti kura,	"

Grows all over India, coming up with the spring crops in N. India and the Panjab hills. The poorer people use it largely as a pot herb.

Chenopodium auricomum, *Lindley*, a tall perennial herb of the Darling river to Arnhem's land, furnishing a nutritious and palatable spinage. It can live in arid desert regions.—*V. Mueller*.

Chenopodium blitum, *V. Mueller*, *Blitum virgatum*, *Linn.* An annual herb found from S. of Europe to India, cultivated as a spinach plant; fruits furnish a red dye.—*V. Mueller*.

Chenopodium rubrum, Chih-hien and Hien-tsai of the Chinese. Much cultivated in Hu-peh, in China, as a vegetable.

Chenopodium viride, *Roxb.* ii. 58.

Rockeb el jammel,	ARAB.	Betoya,	BENG.
Beto sag,	BENG.	Chawut,	BY.

Chenopodium vulgare, Bhatwa of Panjab. Goosefoot is found in the Sutlej valley between Rampur and Sungnam, at an elevation of 7000 feet. Entirely a rain-crop; grows to six feet high; seeds considered nourishing.—*Cleghorn, Report*.

CHEN-PO. CHIN. *Michelia champaca*, *Linn.*

CHENSUAR, a wild, half-savage forest tribe inhabiting the Eastern Ghats of the Peninsula of India.* They are known to their settled neighbours as the Chenchu kulam, Chenchwar, and Chensuar. They seem to be the people whom Wilson names Chenchu-vadu (*vadu*, TEL., a man). They are about 1200 in number, and dwell in the tract of jungle covering the westernmost range of the Eastern Ghat line, between the Pennar

river and the Kistna, and known locally as the Nulla-Mulla and the Lankamulla; occupy the Palicondah hills to the west of the Nellore district, but chiefly in the Nandikandah pass, on the road between Cumbum and Ghootty, where they serve as watchmen and guides. They inhabit clearings in the forest, live in beehive-shaped huts like the African, Nicobarian, and many of the ruder Asian tribes. These are of wicker-work, with walls about three feet high, and a conical straw roof, with a screen for a door. The women dress like the wandering female basketmakers, whom they resemble in features. They speak Telugu with a harsh and peculiar pronunciation. They look on weaving and other manufacturing arts with contempt. Some of them occasionally visit Nellore, living in patchwork tents, from which they are named Bonta Chenchu. They bring for sale bamboo seed and bamboo flutes. They never engage in cultivation, but live by hunting deer, wild dog, hares, using darts which they throw by hand. They also collect forest products, wax and honey; and a few rear sheep, goats, and cattle. Their food consists of all kinds of flesh, with bamboo seed, wild roots, and ragi, when obtainable. A few firearms are in their possession. They build small round huts of stone and grass, in clusters of ten or fifteen. The men are almost nude; they wear piece cloths, sometimes a cloth round the waist. The more savage members of this race are said to wear leaf-aprons, and never to leave the forests. Their colour varies from dark brown to black. The men are shorter than the neighbouring Hindus, slightly but well made, except about the knee, which is large, and the leg. The features of the men are small and animated; cheek-bones higher and more prominent than in the Hindu in general; nose flatter, and nostrils more expanded; eyes black and piercing. Their hair is more shaggy and less straight than that of the Hindu, and they wear it very long, and rolled up at the back or near the crown like that of a woman. They bury their dead, but sometimes burn; and the Nandial Chenchwar, like the Tartar, carry the deceased's weapons to the grave. They use the spear, axe, or matchlock, or bamboo bow and reed arrow tipped with iron. They are patient and docile. It is suggested by Mr. Logan that the Chensuar are a continuation of the wild forest Surah of the mountainous tracts further north in the line of the Eastern Ghats. They have large dogs; and a few are employed as hill police in the pass from the Kuman to Badwail. Vocabularies of six of the non-Aryan tongues—the Kond, Savara, Gadaba, Yerukala, and Chentsu—are given in *Beng. As. Soc. Journal* for 1856.—*Newbold in R. As. Soc. Journ.* 1845; *Logan in Journ. Ind. Arch.*

CHENSU KARRIR, a wandering race mentioned by Buchanan as residing in the hilly tracts near Coimbatore. They are described as without houses or cultivation; out by snares, or with the bow, catch birds or large game, which they dispose of for rice. The white ant is said to be used by them for food. They approach their game under the shelter of a cow or buffalo, which they have taught to stalk. Their language is a dialect of the Tamil, with a few Canarese words intermixed. Those near towns learn the use of Telugu words. A Tamil man is unable to understand their language. A few reside in little huts out-

side on the outskirts of villages, and have a little blanket, but their ordinary clothing is a loin-cloth. In the denser forests they dwell in caves or hollows of trees, or under the shelter of a hut made of branches of trees, and use only a few leaves for covering. They describe the Animallay as their original country. They seem to have disappeared from that locality.

CHEPANG, Haiyu, and Kusundu, three uncivilised Bhot tribes who reside amid the dense forests of the central region of Nepal, to the westward of the great valley; they dwell in scanty numbers, and nearly in a state of nature. They live in huts made of the branches of trees, on wild fruits and the produce of the chase. The Chepang are slight, with large bellies. Mr. Hodgson says they are of Mongol descent. Their language is akin to the Lhopa. The Chepang, Haiyu, and Kusunda seem to belong to the Rawat group of frontier populations. They are named by Mr. Hodgson, the Durre, Denwar, and Bramho. They occupy the districts where the soil is moist, the air hot, and the effluvia miasmatic.—*Latham*.

CHEPATI. HIND. Cakes made of wheaten flour and water or milk, baked on the girdle. They form the principal article of diet of the Hindus of N.W. India and of the Rajput races.

CHEPU-NARINGI. TAM. Indigofera enneaphylla, *Linn.*

CHEPURU VALELLU. TEL. A grass grown in Kimedu, from the roots of which neat table mats and teasing-brushes are made.

CHEPU TATTA. TEL. This term is applied to several plants. *Desmodium polycarpum*, *D. C.* *Hedysarum purpureum*, *R. iii.* 358. *Coldenia procumbens*, *Asarum Europæum*, and *Elytraria crenata*.

CHER, in the Panjab, statute labour.

CHERA or Kerala, an ancient dynasty in the south of the Indian Peninsula. They seem to have risen on the fall of the Pandiya sovereignty, and to have ruled over a small state between the territory of the Pandiya and the western sea. It comprehended Travancore and parts of Malabar, Coimbatore, and Salem. It is mentioned in Ptolemy, and may have existed at the commencement of the Christian era. It spread at one time over the greater part of Karnata, but was subverted in the 10th century, and its lands partitioned among the surrounding states. The Chera princes appear to have been established first at Scandapura in the Malabar coast, and subsequently at Talad or Dalavanpura on the Cauvery and Mudugondapattanam, perhaps the same as the modern village of Mudugondoor, on the road from Seringapatam to Koonghul. The Carura regio Cerebothri has been supposed to indicate that Caroor in the Coimbatore country was one of their earliest seats. They were powerful in the 4th and 5th centuries. Their 16th king boasts of having conquered Andhra and Kalinga; and their 20th king, Kongani Raya III., boasts of having conquered Chola, Pandiya, Dravida, Andhra, Kalinga, Varada, and Maharastra desas, as far north as the Nerbadda river. Vira Chola (A.D. 927-977) seems to have checked their victorious career; and Ari Vara Deva, another Chola king (A.D. 1004), to have completed their destruction. He also boasts of having carried his victorious standard to the Nerbadda, and to have been a benefactor to the Chillumbaram. After this, the Bellala of Mysore,

and the Chalukya in Central India, seem to have become dominant.

The Kongu Desa Rajakal is a book describing the series of the Kongu or Chera princes, from Vira Raya Chakravarti to raja Malla-deva.—*Elphinstone's History of India*, p. 414; *As. Res.* xv. p. 40; *Fergusson*, p. 321; *J. R. As. Soc.* viii. p. 5. See Kerala; Narapati; Pandiya.

CHERAITA. HIND. Valuable bitters, equivalents of gentian, obtained from the genera *Ophelia*, *Exacum*, *Agathotes*, *Adenema*, and *Andrographis* (*Justicia*).—*Dr. Cleghorn, Ed. New Phil. Mag.*, No. 6 of 1856. See Chiretta.

CHERAKEN. JAV. Croton seed.

CHERAN, a name of the Chera race, who ruled at Kerala on the Malabar coast.

CHERAT, a hill cantonment and sanatorium, near the Markulan pass in the Peshawur district, 34 miles from Peshawur in the Panjab, in lat. 33° 50' N., and long. 72° 1' E., on the west of the Khatak range. It is 4500 feet above the sea.—*Imp. Gaz.*

CHERI. TAM. A town, a village, a hamlet. Paraicheri or Parcherry, the Pariah district of a town, Tellicherry, Pondicherry.

CHERIBON or Cherimai, a mountain in lat. 6° 54½' S., and long. 108° 28¼' E., in the north of Java, 10,323 feet high.—*Horsburgh*.

CHERIMELLE, Cheramella, or Harriphal. BENG.

Cheremin, . . . MALAY. | Cherambola, . . . PORT.

In Japan this fruit is pricked all over with a needle, and laid in water. For use it is boiled up with sugar, and kept with syrup in glass bottles. These fruits are often eaten with tea. They are sometimes eaten unripe with a little salt, and may likewise, when in that state, be preserved in salt. Sometimes they are eaten ripe, and have then a subacid taste.—*Thunberg's Travels*, ii. p. 292.

CHERIMOYA. Anona cherimola.

CHERIN. —? a form of divination.

CHERKH. PERS. A breed of hawks used in Persia in hunting antelope. They are trained to fly at and pounce on the deer's head, so as to enable the dogs to come up with the antelope.

CHEROOTS, the dried leaves of the tobacco plant, formed into small rolls for the purpose of smoking. In Europe, Havana cigars are usually reckoned the best. In India, Manilla cigars are most esteemed. Imitation Manillas, Chinsurah cheroots, Lunka, Dindigul, and Trichinopoly cigars are the chief kinds manufactured in India.

CHERRAPOONJEE or Charapunji is a hill station in the Khasya hill district of Assam, 4588 feet above sea-level, in lat. 25° 15' 58" N., and long. 91° 46' 42" E. Its average rainfall during 1874, 1875, and 1876 was 368.41 inches, and in 1861 the fall was stated to be 805 inches. The station stands on the first of a series of hills that rise abruptly from the plain of Bengal, and catch the vapour of all the clouds that roll up from the sea. The principal race in the neighbourhood are the Khasya, an able-bodied people, who differ little from the Garo. They are arranged in petty rajaships in the Khasya hills. They build their houses on piles; they trap fish like the people of Borneo, Java, and Sumatra. A bed of coal is raised on an insulated summit; sandstone, composing here as elsewhere the base of the coal-measures, forms the lofty front of the mountains facing the plains. The lower beds consist of a

coarse conglomerate, resting on greenstone, after the manner of similar conglomerates in nearly all countries in which their fundamental rocks have been observed. Between Ringhot and Cherrapoonjee, and at other places in the hills, are bridges made of the fibre of the India rubber tree. The Khassya race inter their dead in places where they erect oblong pillars, hewn or unhewn, three to thirteen in number.—*Bl. As. Trans.* iii. p. 25, xiii. p. 614; *Dr. Buist's Catalogue*; *Latham*.

CHERRO NALMAPELLA. TAM.? A light brown-coloured wood of Travancore, sp. gr. 0.483, used for making canoes.—*Col. Frith*.

CHERRO-POONA. TAM.? A dark-coloured wood of Travancore, used for building houses.—*Col. Frith*.

CHERRO-TIMBA. TAM.? A dark-coloured wood of Travancore, sp. gr. 0.843, about 3 feet in circumference, used for house-building, tools, etc.—*Col. Frith*.

CHERRU. TEL. A tank.

CHERRU PINAKOTTE. CAN., MALEAL. *Calophyllum calaba*.

CHERRY.

Yu-li,	CHIN.	Ciriigia,	IT.
Cerise guigne,	FR.	Ceroza,	SP.
Kirsche,	GER.		

The fruit of the *Prunus cerasus*. The bird cherry, *P. padus*, occurs in the Panjab, the N.W. Himalaya, and Afghanistan. It has a mawkish taste.

CHERRY LAUREL, *Cinnamomum cerasus*.

CHERRY-STONE OIL, oil of *Prunus cerasus*.

CHERRY TREE of Norfolk Island. The bark is used for tanning; and it furnishes one of the most useful woods.

CHERSYDRUS, a genus of sea-snakes. *C. annulatus* and *C. granulatus* occur in the sea at Madras. See *Hydridæ*; *Reptiles*.

CHERU, aborigines in Ghazipur, part of Gorakhpur, the southern part of Benares, Mirzapur, and Behar. They are sometimes said to be a branch of the Bhur. They seem to be the same as the Sivira or Seoree, but Buchanan considered them distinct. Cheru declare themselves to be descended from the great serpent, from which they may be supposed to be the Nagbansi of Magadha. Remains of buildings attributed to them are found near Buddha Gya, Sasaram, and Ramghur, and the images of Siva and Hanuman found in them indicate that they belonged to the Hindu religion. They appear to have been expelled from their ancient abodes by the Pramara of Bhojpur, the Hyohun of Hurdj, and the Bhoonhar, a little before the first Mahomedan invasion, about which time there seems to have been a general convulsion in N. India, during which several tribes acquired their present possessions. The features of the Cheru are said to resemble the occupants of the Vindhya mountains. They live by cutting timber, collecting drugs, and killing game; and though their numbers are very low, they continue to create a raja for every five or six houses, and invest him with the tilak in due form. The emperor Sher Shah subdued Muharta, a Cheru zamindar of Behar, which seems to have been a last but strong effort of the Cheru race. The chief of Singrowlee in Mirzapur is a Cheru, though he calls himself a Benbans. Sir H. Elliot suggests that the Sivira, Seori, and Cheru may perhaps be the Sauraseni. In the Harivansa is

the following passage: 'From this race came the Sauravira and Saurasena. The great king Saurasena has given his name to the country over which he reigned' (Elliot, Glos.). They have almost disappeared from the seat of their ancient splendour. Once rulers of Behar, a petty population (2377) now represents the nation there. Not above 400 remain in their old home on the plateau of Shahabad, and about 3000 live in the land bordering on Nepal. They were driven into the Nepal Terai, and into the highlands of Chutia Nagpur, where they number 17,632, but are a very humble class of cultivators and day-labourers. They are usually of a light-brown colour, with high cheek-bones, small eyes obliquely set, low, broad noses, and large mouths with protuberant lips, but considerably softened by the alliances with pure Hindu families, which their ancient power and large possessions enabled them to secure. The village of Munka in Palamaw belongs to a Cheru. The Cheru and Kharwar and Kol observe triennial sacrifices. Every three years a buffalo and other animals are offered in the sacred grove 'Sarna,' or on a rock near the village. They also have, like some of the Kol, a priest for each village, called Pahn. He is always one of the impure tribes, a Bhuiya, or Kharwar, or a Parheya, and is also called Byga, and he only can offer this great sacrifice. No Brahmanical priests are allowed on these occasions to interfere. The deity honoured is the tutelary god of the village, sometimes called Duar Pahar, sometimes Dharti, sometimes Purgahaili or Daknai, a female, or Dura, a sylvan god, the same, perhaps, as the Darka of the Kols.—*Elliot*; *Wilson*; *Dalton*, *Ethnol.*

CHERUMAN, a class of predial slaves in Malabar, whose name Wilson derives from Chera, MALEAL, the soil. General Briggs names a non-Aryan race Cherumar. They follow the custom of Maruma Katayam.—*Wilson*; *Briggs*.

CHERUMA PERUMAL, a viceroy of the 9th century, who governed the whole Malealam country of Chera or Kerala, including Malabar and Travancore, but afterwards established himself as an independent ruler. He is supposed to have founded the town of Calicut, and all the royal races of Malabar claim descent from him.

CHERU PINNAY. TAM. *Calophyllum spurium*, also *C. calaba*, *Linn.*

CHERU-PUNA, TAMIL, is the small leaf or real mast poon, which is preferred for the masts of ships or vessels. The poon or puna woods are similar in shape and growth; the large sort is of a light, bright colour, and in the forests of Corumcul, in Canara, it grows to a length of 150 feet. At Mangalore, Mr. Edye procured a tree of this sort that would have made a foremast for the Leander sixty-gun ship in one piece, for the sum of 1300 rupees, or £149 sterling. Poon of the forests of Oochin and Travancore is of a very inferior quality to that before stated; one sort is named the Karapa puna, which is dark poon; and Malai puna, meaning the hill poon; and another sort, the Vellai puna, or the white poon, is small, not more than 12 or 18 inches in diameter, and 18 or 20 feet long. In Canara, another sort, named Merchie puna, grows to 28 inches or three feet in diameter, and from 30 to 50 feet long, and is very much like American birch. It is generally

defective and not durable; when felled, it opens and splits at the top and butt for many feet in length. The weight of the poon may be said to be from 40 to 48 pounds the cubic foot; but the lightest Edye met with was $34\frac{3}{4}$ and the heaviest 50 pounds the cubic foot when dry. The leaf of this tree is small and oval, about two by one and a half inches broad, and the fruit grows in bunches; it is about the size of coffee-berries. From this the natives extract oil, which is used for various native purposes.—*Edge, M. and C.*

CHERVIL. *Cherophyllum sativum*. The leaves are used in soups and salads.

CHES, the Shatranj of the Persians, is supposed to have been invented by a Brahman who succeeded the dynasty in Sind. In Hindu legend, the wife of Ravana invented chess to wile him from his martial propensities.

CHEST, the commercial form in which opium is sold. A chest of Behar opium, consistence 75, made at Patna, contains 105·107 lbs. avoirdupois.

A chest of Benares opium, consistence 70, made at Ghazipur, contains 98·1 lbs. avoirdupois. The 'consistence' is the percentage of fine opium, excluding all water.

A chest of Malwa opium is usually assumed to range a little above 126·128 lbs., of 90 to 95 per cent. of fine opium.

A chest of Behar opium contains 83, and a chest of Benares opium at most 78, of the contents of a chest of Malwa opium.

The actual cost of a chest of Benares opium is Rs. 373, and of a chest of Behar opium, Rs. 436. The sum paid to the cultivator is Rs. $4\frac{1}{2}$ to Rs. 5 a seer, at 70 per cent. consistence.

CHESNEY, GENERAL F. R., an officer of the Royal Engineers, who in the years 1835, 1836, and 1837 conducted an expedition for the survey of the rivers Euphrates and Tigris, and wrote the reports.

CHESTNUTS.

Sin-lih, Pan-lih, . . . CHIN.	Kastamen, GER.
Tuh-kiah, SANSKRITO-CH.	Castagne, FR.
Chataignes, FR.	Castanas, SP.

The fruit of the *Castanea vesca* of Europe. The chestnut tree grows to a large size in China, and one, two, or three nuts are found within the large, dehiscent-spiny fruits. They are constantly spread for sale in Chinese streets in both the raw and roasted forms. Chestnut of China is *Southwellia balanghas*.

Horse chestnuts are the fruit of the *Æsculus hippocastanum*, *Linn.*, an Asiatic tree, planted in Europe for shade and ornament; they are used for feeding sheep, horses, etc.

Water chestnuts are the horned fruits of species of *Trapa*, *T. bicornis*, *T. bispinosa*, and *T. natans*, *Linn.*, growing in ponds, lakes, etc., in the temperate climates of Europe and Asia. In China and Kashmir they are largely used for food.

CHETAN. MAL. On the Malabar coast, a man-servant, a slave, a weaver of a particular caste.—*Wilson*.

CHETANA SWAMI, a Hindu religious reformer, the preceptor of Baba Lal, who founded the Baba Lal sect.

CHETCHEN, a tribe of the Eastern Caucasus, a branch of the Mitchendegen or Kista, one of the seven clans of that range. They dwell along the banks of the Terek. They are Mahomedans

and fanatical, and plunder and enslave their pagan neighbours, receiving assistance from the Lesghi and all Mahomedans. They headed the opposition to the Russians on the eastern, as did the Circassians on the western, side of the Caucasus, whilst there rallied round them the smaller tribes, Abekas, Ubiche, Tschigietian, Tartar (Karatschai), and Kabardan, related with the Adighe by blood and tongue. They inhabit the beautiful mountain chain between the high Caucasian chain and the Terek. Shamyl was their leader in opposing the Russians.

The Chetchenzi tribes were considered the most formidable of all those which inhabit the innumerable rocky valleys of the eastern line of the Caucasus. Their predatory excursions, whether in large or small bodies, were not only a dread to their own immediate neighbours, tribes like themselves, though of less extent and power, but their sudden descents, ambuscades, and continued warfare, kept the disciplined Russians constantly on the alert. These lords of the mountains seemed never to rest, day nor night. Unwearied in their watch for prey, and like lightning in attack, for they struck or were lost to sight as quickly. The bride always brings a dower, consisting of cattle, etc. She is brought home to the house of her betrothed husband, and then the ceremony is completed by dancing, drinking, and carousal.—*MacGregor; Porter's Travels*, i. p. 62.

CHETEK, a climbing vine of Java; its sap is poisonous.—*Bikmore*, p. 53.

CHETI POTLA. TEL. *Trichosanthes cucumerina*, *L.*

CHETIPPA. TEL. *Hymenodactylon excelsum*.

CHETKA. From this town to Neilung, on the Jankee or Jannubee branch of the Ganges, is the lofty pass of Chungsakhago, not under 18,000 feet. See Kanawar.

CHETKOOL. From this place to Burasoo in Garhwal the road leads over the Sungla pass, about 16,000 feet high. See Kanawar.

CHETRIYA, commonly pronounced k'hetri, in the Hindu castes; also written Chatriya, Ch'hatri, Khatri, and properly Kshatriya. All Rajputs claim to be of this caste, but none of the ancient race are supposed to have survived their incessant wars. Menu says (Art. 43, 44, ch. x. p. 346) that several of the Chetriya tribes—Paundraca, Odra, Dravira, Camboja, Yavana, Saca, Parada, Pahlava, China, Cirata, Derada, C'hasa, Cirata, and Derada—had gradually sunk from the second to the Sudra class, owing to their omission of holy rites and to their seeing no Brahmans. See Chattri; Khatri; Kshatriya.

CHETTU. TEL. A tree.

CHETTU-KARAN. MALEAL. A toddy-drawer; a grass-cutter.

CHETTY, pl. Chettiar, a titular distinction for the traders and financiers of the Peninsula of India, under the forms of Seth, Sheth, Sethi, Chettiar. It is applied without any reference to caste or race, to the Zoroastrian Parsee engaged in trade, to the Mahomedan Borah, the Teling Komati, the Tamil Vellaler, the silk-weaver, the Kavary; and amongst the Telugu races the title is conceded to the Gajoola halija bangle-makers, the Vaniar oil-pressers, the Elavanian cloth-merchants, and the Komati (Comati) grocers and general dealers. In the Tamil country to the south it is allowed to the Natoo kottiyar, keen, enterprising

general merchants, and to the Kusavan potters. The Tulu race also take Chetty as a title. Many of the traders and shopkeepers of Madras are of small stature, but they are fair-coloured. They are intelligent and successful business men, and a few have lately entered into commercial transactions to distant countries. Their wives dress with the sari, but only of late years have any of them adopted the choli or bodice. A Sudra naidoo, the late Latchmenarsu Chettiar, member of the Legislative Council of Madras, took this title. None of them have ever had any political relation with the Native States.

CHEUNAKA. SANSK. *Cicer arietinum*.

CHEVA CHETTU or Mrauu. TEL. Red-wood timber.

CHEVANESSIA ESCULENTA, a creeper cultivated in British Burma. See Caoutchouc.

CHEVIKAM. MALEAL. Piper nigrum.

CHEVUKURTI CHETTU. TEL. *Slevogtia verticillata*, *D. Don*; *Adenema hyssopifolium*.

CHEVULAPILLI TIGE. TEL. *Ipomoea pes-caprae*, *Sviet*.

CHEWA. HIND. *Ephedra Gerardiana*.

CHEWAGIR-CHHATRA. HIND. *Morchella semilibera*.

CHEWANG, a chief of one of the vassal states into which feudally governed China had been divided. He made himself sovereign of the empire, under the title of Che-hwang. He was a great conqueror, and was successful in opposing the inroads of the northern barbarians, the Heung noo or Huns, one of his measures to withstand whom was the erection of the celebrated Great Wall.

CHEWKA. TEL. *Tamarindus Indica*.

CHEYAIR, a tributary of the Pennar river; also a tributary of the Palar river.—*Imp. Gaz.*

CH'HACH'H. HIND. Butter-milk.

CH'HAEE or Chhai. HIND. A pad to prevent laden bullocks from being galled.

CH'HAGUL-BATEE. BENG. *Naravelia Zeylanica*. Ch'hagul-bantee, *Damia extensa*. Ch'hagul-khoori, *Ipomoea pes caprae*. Ch'hagul-nudi, *Sphaeranthus hirtus*. Ch'hagul-patee, *Cynanchum pauciflorum*. Ch'hagul-putputee, *Euphorbia dracunculoides*.

CH'HAIJ. HIND. A basket used in winnowing.

CH'HAKRA. HIND. A cart or carriage without sides, used for conveying cotton. The gari has sides.—*Ell.*

CH'HANTI. HIND. A coarse cloth.

CH'HAP. HIND. A stamp, a seal; in North India, the Pottadar's stamp. The Chinese chop. In Dehli and the Upper Doab it is the name applied to a small bundle or heap of thorns about a foot high. When large, it is called Khewa, *q.v.* Ch'hapa-Kaghaz, a newspaper, a printed paper.

CH'HAPPAR. HIND. Thatch or a thatched roof. Ch'happar-band, a thatcher.

CH'HATARPUR, the chief town of a feudatory state in Bundelkhand of 1240 square miles, and a population in 1875 of 170,000; revenue, £25,000. Its chief is a Puar Rajput. Its troops, 62 horse and 1178 infantry and police, with 32 guns.—*Imp. Gaz.*

CH'HATIN. BENG. *Alstonia scholaris*.

CH'HATISGARH, the S.E. division of the Central Provinces, lying between lat. 20° 1' and 22° 33' 30" N., and long. 80° 28' and 84° 26' E. The area of the plains of Ch'hattisgarh is computed at

about 10,000 square miles, including most of the zamindari estates, but excluding tracts of hill and forest. The population in 1866 was 2,103,165. The Chamar caste maintain here a numerical preponderance. They are not, however, leather-workers, but are eager and industrious agriculturists; and nearly a fourth of the cultivation of the land must be in their hands. About the middle of the 19th century, under the teaching of Ghasi Das, they became monotheists; every evening they fall prostrate before the sun, exclaiming Sat Nam! Sat Nam! from which they have been styled the Sat Nami, meaning worshippers of the Pure God. But serpent-worship seems to have largely prevailed in former times in many parts of the Central Provinces; and other races are spirit-worshippers, believe in sorcery and witchcraft, and have recourse to the ordeal. See Central Provinces; Chamar; Gond; Rai Dasi; Raipur; Satnami.

CH'HATRI. HIND. An umbrella; a small ornamented pavilion built over a place of interment, the cenotaph of a Hindu chief.

CH'HATTOOR, also Ch'hattur. HIND. The name given in Northern India to a covering placed on a heap of winnowed corn. It is from the Hindi Ch'hatr, an umbrella, but is known also by the names of Burhawun and Chank, *q.v.* In Benares it is generally a mere cake of cow-dung; elsewhere it is a shoot of grass or a dry stick of the arhar, *Cajanus Indicus*, with several (generally five) projecting twigs, on each of which a small piece of cow-dung is placed, or a flower of the ak or mudar (*Calotropis gigantea*). Sometimes a spear is stuck in the ground at the side of the heap; and sometimes an artificial flower is placed at a short distance from the bottom of the heap. The object in view is to prevent the effect of an evil eye, or the injury which is sure to be sustained from the praises of any casual visitor, or any eye-biter, as an Irishman would say. That this strange opinion was entertained among the ancients, is known to every reader of Virgil and Theocritus. It is a prevalent opinion not only among the Scotch and Irish, but with almost every other nation of the globe. But by the native of N. India the Ch'hattoor is devoutly believed to offer a sure safeguard against the disastrous effects of fascination. If his ras or heap be but provided with this protection, the husbandman may sleep secure; but as sure as he neglects it, should an evil eye fall upon the grain, he will have to weep over the lost hopes of a year's labours.

'Nam quocunque aciem horribilem intendisset ibi omnes Cernere erat subito afflatus languescere flores.'

—*Spem quo anni agricolae moestum flevit caducam.*
—*Elliot.*

CH'HAUR. HIND. A custom in the N.W. Provinces of India, of walking a boundary with a raw cow-skin on the head, under a solemn oath to decide correctly; five sticks are held in the hand, to imply that the arbitrator is the representative of the panchayat.—*W.*

CH'HAYA. BENG. *Ærta lanata*.

CH'HAYA means a shadow. In Hindu astronomy, Vishuva ch'haya, the shadow of a gnomon, when the sun is in the equinoctial points. Madhyama ch'haya, the mid-day shadow of the same at any other time of the year. Sama mandala ch'haya, the mid-day shadow of the same when the

sun is east or west of the gnomon. Ch'haya suta, one of the names of Saturn, meaning born from darkness.—*Warren*.

CH'HAYA. HIND. A shade, a spirit, the shade of a goddess or deity. In the hysterical or cataleptic seizures which happen to Hindu devotees, where a deity is supposed to take possession, the expression used to denote it is Ch'haya aya or Saya aya; and the body of the possessed is said to be filled, ang-bhara. In Hindu mythology, Ch'haya is the wife of the sun.

CH'HEDA. HIND. A destructive little animal similar to the weevil (*Calandra granaria*), from Ch'hed, HIND., a hole, the verbal root of Ch'hedna, to pierce. It is also the name of the disease which grain sustains when affected by the ravages of this insect.—*Elliot*.

CH'HEENKA. HIND. A network made of strings or cords; to place anything on the cords of a bhang.

CH'HEENTA, also Ch'hinta. HIND. From Ch'heentna, to sprinkle. A field in which peas and linseed have been sown by broadcasting while the rice crops are standing on the ground. When the rice is cut, these crops are left to grow, and are harvested in the beginning of the month Chait. In Delhi the term Ch'heenta is applied to throwing more seed amongst a growing rice-crop. The same word is employed in Gorakhpur to signify lands in which seed has been scattered after a single ploughing; more particularly at the extremities of villages, with a view to secure possession.

Ch'heenta is also a drop of water. Ch'heentecheente parna, spitting of rain. Dud'h ki handi men, pani ki ch'hinti daina, to sprinkle water into a jar of milk, meaning to cause unnecessary annoyance. From this word is the English chintz.—*Elliot*.

CH'HIL-TAMBA. HIND. Oxidized copper filings.

CH'HINDWARA, a town which gives its name to a British district of the Central Provinces, with an area of 3852 square miles, and a population in 1872 of 316,095. The midland Gond kingdom of Deogarh had its capital in this district; the hill parts have long been held by Gond or Kurku chiefs, and the British have allowed the petty rajas to retain their lands and rights as tributaries. The Gonds in 1872 numbered 109,469, besides Bharia and Kurku; Ahir or Gaoli, 23,844; Bhojar, 10,506; Dher or Mhar, 27,790. The others are Hindus, Brahmins, Kunbi, Teli. Ch'hindwara is 2200 feet above the sea. Coal of the same quality as that of Raniganj occurs. The Ch'hindwara forests are very extensive, and lie principally on the southern slopes of the Satpura mountains.—*Imp. Gaz.*

CH'HIPA or Ch'hipi, a printer of cottons, a stamper of chintz.

CH'HIPIA, a small village in the Gonda district in Oudh, in lat. 22° 3' 30" N., long. 78° 59' E. It has a handsome Vaishnava temple of stone and marble, erected by Sahajanand, a religious reformer in Western India, who is regarded by his followers as an incarnation of Krishna, and is worshipped as Swami Narayan. His descendants are at the head of the sect at Junagarh. Many Hindu pilgrims visit the birthplace of their deified leader.—*Imp. Gazetteer*.

CH'HITUA. HIND. Broadcast sowing.—*Elliot*.

CH'HOD-TEN, an offering to a Buddhist deity; a Buddhist temple. These are numerous in Tibet, consecrated to the celestial Buddha, in contradistinction to the dungten, which are built in honour of the mortal Buddhas, and which ought to contain some portion of relics, either real or supposed. See Buddha; Chaitya; Dungten; Tope.

CH'HOLA. BENG. Cicer arietinum.

CH'HOONCHOO MOORMOORI. BENG. *Isolepis squarrosa*.

CH'HOR. HIND. Release. Chor-chitti, a deed of release.—*Ell.*

CH'HOTA, Ch'hoti. HIND. Ch'hoti, BENG., small.

Ch'hoti-kelu, *Asparagus racemosus*.

Ch'hoti-lewar, *Andromeda fastigiata*.

Ch'hoti-lane, *Suaeda fruticosa*.

Ch'hoti-manhari, *Solanum xanthocarpum*.

Ch'hoti-van, *Salvadora Persica*.

Ch'hoti-mai, *Tamarix orientalis*.

Ch'hoti-akundo, *Calotropis herbacea*.

Ch'hoti-bich taruka, *Argyrea argentea*.

Ch'hoti-chand, *Ophioxylon serpentinum*.

Ch'hoti-doodhee-luto, *Gymnema sylvestre*.

Ch'hoti-genda, French marigold, *Tagetes patula*.

Ch'hoti-gothoobee, *Cyperus dubius*.

Ch'hoti-hulkusa, *Leucas aspera*.

Ch'hoti-jalgantree, *Panicum repens*.

Ch'hoti-jann, *Eugenia caryophyllifolia*.

Ch'hoti-jantee, *Utricularia diantha*.

Ch'hoti-jhunjhun, *Crotalaria prostrata*.

Ch'hoti-keruee, *Euphorbia chamezycoc*.

Ch'hoti-kirata, *Slevogtia verticillata*.

Ch'hoti-kokahim, *Vernonia cinerea*.

Ch'hoti-kulpu, *Trichodesma indicum*.

Ch'hoti-kut, *Sagittaria sagittifolia*.

Ch'hoti-looniya, *Portulaca meridiana*.

Ch'hoti-mechheta, *Hemidaphnis polysperma*.

Ch'hoti-musoor, garden tare, *Ervum hirsutum*.

Ch'hoti-matur, grey pea, *Pisum sativum*, *P. quadratum*.

Ch'hoti-neelpud-mo, *Nymphaea stellata*.

Ch'hoti-okra, *Zapania nodiflora*.

Ch'hoti-pan-choolee, *Villarsia cristata*.

Ch'hoti-phootika, *Osbeckia aspera*.

Ch'hoti-pine-nuttee, *Cynodon filiformis*.

Ch'hoti-ruktu-kumbul, *Nymphaea rosea*.

Ch'hoti-sada-makhum-shim, *Canavalia erythrosperma*, flore albo.

Ch'hoti-shundhi, *Nymphaea edulis*.

CH'HOTA UDAIPUR, also called Mohan, the chief town of a tributary estate in the province of Gujerat; area, 873 square miles, and population 62,913, 86 per cent. being the Bhil and Koli. The chief is of the Chauhan Rajput. During the rebellion in 1858, the chief refused to admit Tantia Topi into his capital, and Tania was defeated there by General Parke. Revenue, £30,000; and tribute, £1050.—*Imp. Gaz.*

CH'HURA. HIND. A big knife used by Afghans as a weapon. Ch'huri, a small knife.

CH'HURI-KA-BANDHA. HIND. A ceremony, formerly in use in the Mahratta country, of formally investing a Sudra with a bill-hook, in imitation of the investiture of the Brahman with the cord.

CH'HUTTEE. HIND. A Mahomedan rite on the sixth day of a woman's confinement.—*Herk.*

CH'HUTTHEH, a subdivision of the Jat race in the Panjab. See Jat.

CHIA KAI. MALEAL. Pods of *Acacia concinna*.

CHIAN and Cyprus turpentine, gum-resins, products of a pistacia. See Gums.

CHIBBUR. SIND. *Cucumis pubescens*.

CHIBH, a tribe south of Kaashmir, but little reclaimed from barbarism either by Hindu or Mahomedan conquerors.

CHICAOOLE, in lat. 18° 17' 25" N., and long. 83° 56' 25" E.; a town in the Ganjam district of the Madras Presidency. It is four miles from the sea on the Languliga river. It was at one time the Kalinga capital. It gives its name to a district with a population of 169,094 souls, mostly Vaishnava Hindus, and speaking Telugu and some Uriya. It forms part of the Northern Circars, which have been under the Reddi or Gajapati; during the 16th century under the Kutub Shashi, in the 18th century under the Nawabs of Hyderabad and Arcot. In November 1753, M. Bussy obtained it for the French E. I. Company, but it was afterwards ceded to the British. In 1791, and again in 1866, Chicacole suffered greatly from famine.—*Imp. Gaz.*

CHICANE of Languedoc is the game of Choughan, once universally practised throughout Persia, and formerly often played on a level piece of ground near Shiraz. As a game on foot, we have it in the cricket of England, the golf and shinty and hockey of Scotland, and the hurling matches of Ireland. Pietro della Valle (Viaggi, Lettera de Casvin 25 luglio 1618) discovered it in the Florentine Calcio. Ci' e solo questa differenza tra il giuoco de Persiani e l' calcio de Fiorenti, che i Fiorentini giucano con molta gente a piedi, etc.; Ma i Persiani, piu nobilmente giucano a cavallo. The chicane of Languedoc is played as in Persia, with a wooden ball and a club headed like a mallet or hammer.—*Ouseley's Travels*, i. p. 346. See Choughan.

CHICHA KOTTA. In a battle fought here A.D. 1772 by the British, the forces of the Bhutan raja were defeated.

CHI-CHAY, a Buddhist sage of China, whose writings have been very influential.—*Dr. Edkins*.

CHI-CHIA, also Pudma and Purpinja. HIND. *Juniperus communis*.

CHICHIRIA. B. and H. *Achyranthes aspera*.

CHI-CHOU and Chi Hsien are district magistrates in the province of Kwang-Tung in China. See Kwang-Tung-Chi.

CHICHRA. HIND. *Butea frondosa*.

CHICHRI. HIND. *Plectranthus rugosus*.

CHICHRU. —? The Himalayan nettle.

CHICHUNDA. HIND. *Trichosanthes anguina*.

CHICKAN, also Chickan-dozi. HIND. Plain embroidery. That in use for European families is usually called work or Chikkan work. It is a large branch of muslin work of India. Flowers are worked in silk, muslin, or cotton, on a cotton ground.

CHICKARA. HIND. *Tetracerus quadricornis*. See Bovidæ.

CHICK-PEA, *Cicer arietinum*.

CHICKRASSIA TABULARIS, *Ad. Juss.*

Swietenia chickrassia, *Roxb.* ii. 379.

Chikrassi, . . . BENG.	Ganti malle, . . . SALEM.
Pudha of . . . BOMBAY.	Hulang-bik-gas, . . . SINGH.
Yimma, Zimma, . . . BURM.	Aglay maram, . . . TAM.
Dul mara, Dal mara, CAN.	Chittagong chettu, . . . TEL.
Bastard cedar, . . . ENG.	" karra, . . . "
Chittagong wood, . . . "	Chetakum . . . "
Deolar, . . . "	Madagari vembu, . . . "
Pubha, Pabba, Hool, MAH.	

This large tree occurs in the mountainous countries to the east of Bengal, in Chittagong, also in Coimbatore, Ceylon, is rather common in the southern jungles of the Bombay Presidency, but much less so in the northern, where, in common with one or two other light red-coloured woods,

it currently passes under the general name of cedar or bastard cedar, and all are extensively employed in cabinetmaking. This has quite a cedar-like smell. In Madras it is extensively used in cabinet-making under the denomination of Chittagong wood, being imported from that province, though it is abundant in the mountainous parts of the Peninsula. It is close-grained, light-coloured, and delicately veined; makes beautiful and light furniture, but is apt to warp during the season of hot land winds. Its wood could easily be creosoted. It furnishes one of the deodars of Malabar. The *Chickrassia tabularis* enters the market as one of the cedars, bastard cedars, deodars, and Chittagong wood. This is the true Chittagong wood. The bark is powerful.—*Mr. Roxb.*; *Roxb.* ii. 379; *Beddome*.

CHICKWEED, *Cerastium Indicum*, *W. and A.* **CHICORY**. Ku-tu, CHIN. *Cichorium intybus*, *C. endivia*. The root in Europe is largely employed to adulterate coffee.

CHICUDA. CAN. *Phaseolus max.*

CHI-FU, Chi-le-chow, and the Chi-l-tung-chi are the prefects of the province of Kwang-Tung.

CHIGARA VANTIGE. KARN. A form of land tenure in Mysore, by shares, in which the whole village lands were parcelled out in lots of equal value.—*W.*

CHIGHEH. PUSHT. On the occurrence of a robbery or act of violence in an Afghan village, all the able-bodied men turn out in pursuit. This is called the chigheb.

CHIGRI. CAN. Antelope cervicapra, *Pallas*.

CHIIHA, a haulbridge in use in Jummoo.—*Drew*.

CHIIHAI or Chihara. HIND. A cremation place where Hindu dead bodies are burned, from Chace, ashes.

CHIIHE. HIND. A division of the Gujar tribe.

CHIII. BHOT. *Arctomys bobac*.

CHIII-KIAU. CHIN. Lac.

CHIII-LING, a fabulous beast of the Chinese, unicorn with mane and cleft hoofs, said to appear once in ten thousand years. The last time was at the birth of Confucius, known to curiosity-hunters as, and commonly spelt, kyling.—*Frere*, *Antipodes*.

CHIHNA. SANSK. An emblem of the Jaina thirthankars; a cognisance.

CHIH'RA. HIND. The countenance; a descriptive roll. Chihra-navesi, taking a descriptive roll.

CHIJ. HIND. Wastage allowance in goldsmith's work, Delhi.

CHIJAKRI. HIND. *Podophyllum emodi*.

CHIJLA. HIND. *Fraxinus xanthoxyloides*.

CHIK. HIND., TAM. A screen made of rattans, suspended in India outside of verandahs, over doors or windows, to keep off the glare of the sun's rays. The chik is often made of strips of split bamboo, also of grass, or of the khus-khus grass, the *Anatherium muricatum*; the *Arundo donax*, the *Saccharum sara*, and *S. spontaneum* are also largely used for the chiks of houses.

CHIKALDAH HILL, in lat. 21° 24' N., and long. 77° 22' E., near to and somewhat higher than the fort of Gawilghur. Chikaldah, elevated 3777 feet, is on the Vindhya, or, as some call it, the Gawilghur range of hills, and about 15 miles from Ellichpur. The plateau of Chikaldah is not above three-quarters of a mile broad, and about a mile in length.

CHIKAN. HIND. *Euonymus fimbriata*.

CHIKARA. HIND. Antelope quadricornis,

CHIKATI MRAKU.

Blain; A. Arabica, *Hemprich*; A. sub-quadriflorus, *Elliot*.

CHIKATI MRAKU or Tamalamu. TEL. Xanthochymus pictorius?—*R.*

CHIKAYA or Sikaya. TEL. Acacia concinna, D.C.; A. rugata, *Buch*. The tender acid leaves are eaten in curries; and the skin of the ripe legume is used like soap to cleanse the hair.

CHIKBALLAPUR, a town in Mysore. The Morasu Wakkala, a tribe of hereditary cultivators, during the 14th century founded dynasties of polygars throughout Mysore. In 1761, Hyder Ali conquered this place, and sent the last of the Gauda a prisoner to Coimbatore.—*Imp. Gaz.*

CHIK-CHAK, Ptyadactylus gecko, a lizard of Labuan. It is very domestic, like the chaplak of India. It is said to be luminous on occasions.

CHIKI. HIND. Gouffea holosteoides.

CHIKILINTA GADDI. TEL. Panicum verticillatum, L., R. i. 301. The rapid growth of this beautiful grass has given rise to the common saying, Chikilinta niswaryam, lit. grass, like riches, come and go.

CHIKKI. HIND. A hand-mill, a quern.

CHIKNA-KAIR. HIND. A kind of earth used to remedy kalr or reh in soil. Chikni-Matti, clay, fireclay.

CHIKRI. —? Buxus Nipalensis.

CHIKSA. HIND. A perfumed powder composed of a variety of odoriferous substances, generally mixed up, when used, with sweet-scented oil (phoolail ka tel).—*Herklots*.

CHIKU VELAGA. TEL. Dicliptera parvibracteata, *Nees*.

CHIL, also Chir, in the N.W. Himalayas, are the generic terms for the genus Pinus; and P. excelsa and P. longifolia are so named.

CHIL, or Cheel. HIND. The kites of India. Haliastur Indus, *Bodd.*, is the Bahmany Chil; Milvus Govinda, *Sykes*, is the Chil proper; Baza lophotes, *Chr.*, is the crested black kite; and Elanus melanopterus, *Daud.*, is the black-winged kite.

CHILA. HIND. Cascaria tomentosa.

CHILAGADA DUMPA, or Genuu gadda and Mohanam. TEL. Batatas edulis, *Ch.* About Vizagapatnam, Dioscorea fasciculata, R. iii. 801, is cultivated under this name. It seems to be only a variety of D. aculeata.

CHILAKA DUDUGA. TEL. Guatteria suberosa, *Don.*; Uvaria sub., *R.*; also Unoua discolor, *Vahl*.—*R.*

CHILAKA TOTA KURA. TEL. Amaranthus fasciatus, R. iii. 609.

CHILAMBARAM or Chidambaram, a small town of 15,519 inhabitants in the South Arcot district of the Madras Presidency. It is famed throughout Southern India for its Hindu temples. The Sabhan-aikan Kovil or Kanak Sabha (golden shrine) is sacred to Siva and his wife Parvati. It covers 39 acres of ground. The magnificent principal hall has 936 pillars. It is mostly of granite, with many monoliths 40 feet high; none of its pillars are less than 26 feet high. In the centre is the shrine of Parvati, a beautiful building containing a golden canopy. Opposite it stands the Miratha Sabha, regarded as the most perfect gem of art in S. India. There are other temples; also the Siva Ganga, or Hemapash karani (golden tank).—*Imp. Gaz.*

CHILAMCHI. HIND. A flat metal wash-hand basin.

CHILDREN.

CHILAN. From Chilna, HIND., to go. A way-bill of the post office, etc.; a list of contents; a clearance; written Chillawn. Chilaoni, current coin.

CHILAS. This country is bounded on the north by the Indus river, on the south by the watershed of the ridge over Looloosur lake, on the east by the watershed of the same ridge as above Looloosur lake, culminating in the lofty peak of Munga Parbut; the Astor boundary marches with Chilas here on the west to a point beyond the village of Sazeen, where the Indus takes a turn to the south-west. Chilas affords good pasturage, but lies under snow for a considerable portion of the year. The Sheen, claiming an Arab descent, are the proprietary and governing class. Crime is rare; women have more liberty and power than among Mahomedan tribes, and breaches of chastity are punished by death. They were visited in 1866 by Dr. Leitner, at the request of the Bengal Asiatic Society. Their language seems distinct from Pushtu, Persian, and Hindi, and is not understood by their neighbours the Syud race, who inhabit Durreil and Tankeer to the west of Ghilgit. According to their own traditions, the inhabitants of Chilas were conquered about the middle of the 18th century, and converted to the Mahomedan faith. Up to about 1840, the Kabgan Syuds received quantities of gold-dust as religious dues from the people of Chilas; but when the Syuds, aided by the Sikhs, failed in an attack on Chilas, the dues were discontinued. A second attack by the Sikh nation was successful, and a small annual tribute of 3 tolas of gold-dust and 100 goats is paid to the Kashmir durbar.

CHIL BINJ. HIND. Strychnos potatorum, clearing nut.

CHILCHIL. HIND. Celosia argentea.

CHILDREN.

Aulad, ARAB. | Batch-Katch, . . . HIND.
Bache, HIND. | Pulli, TAM.

Male children are greatly longed for by all the races inhabiting the south and east of Asia. One prevailing feeling regarding them is such as is expressed in Psalm cxxvii. 4, 5: 'As arrows are in the hand of a mighty man, so are children of the youth. Happy is the man that hath his quiver full of them: they shall not be ashamed, but they shall speak with the enemies in the gate.' Most persons will hesitate to attack a large united family. Amongst Hindus and Chinese, with all of whom spirit-worship prevails, sons are particularly longed for, in order to obtain from them duties to the manes of their parents. The eastern custom of nursing a child from the hip or side, as in Isaiah lx. 4, lxvi. 12, is still continued; and a child born after vows is still, as in Proverbs xxxi. 2, called the son of a vow; and many Hindu children of both sexes, but principally girls, are devoted to the gods. As in Genesis xxv. 6, the children of Mahomedans, born of a wife of humbler birth, or of a harem woman, are not deemed equal in social rank to the children of a high-born wife. Infanticide is still continued amongst certain Rajput races, but the causes are not for fulfilment of any vow, or from any religious duty, but pride or poverty induces them to destroy their female children, and many Rajput tribes have the utmost difficulty in obtaining wives. The British Indian Government, in the early

part of the 19th century, declared the throwing of children into the Ganges to be criminal, and has made continuous efforts to prevent the destruction of children. The Chinese have complete power over their offspring, even to life, but in no country of the south-east of Asia is the sacrificing of children, on religious grounds, continued; though, down to comparatively recent historic times, the Phœnicians, Carthaginians, Aramœans, Syrians, Babylonians, and even Israelites, and their neighbours on both sides of the Jordan, sacrificed their children with the hoped-for object of averting any great and serious misfortune. A Phœnician legend is of El, the strong, offering up his son Yedud or Yedid, the beloved,—El being the Kronos (Bunsen, iii. 286). Malek Bel was the same as the Tyrian Hercules, or Moloch or Bal-Moloch, to whom, as also to Hecate and Meleket Artemis, dogs were sacrificed. In Exodus xiii. 13, xxxiv. 20, the animal's neck or backbone had to be broken unless redeemed. The principal sacrifices offered to Hercules Usoo, as well as to his mythical companion, were human beings, who in Laodicea of Phœnicia might be ransomed by a doe. At Carthage, the practice of sacrificing their favourite children, and those of the highest rank, in honour of Hercules, continued down to their latest wars. The legend of the Grecian Hercules is that he became insane, burned his own children, as well as those of his twin brother Iphicles, and murdered his guest Iphitus.—Bunsen, iv. 212, 213. See China; Harm; Infanticide; Rajput.

CHI-LE-CHOU and Chi-le-tung-chi, prefects in the Chinese province of Kwang-Tung.

CHILGHOZA. HIND.; corruptly Galghoza. The nuts or seeds from the cones of the edible pine, *Pinus Gerardiana*. In Hazara, the seeds of the Chil, *P. excelsa* and *P. longifolia*, are so called.

CHILIANWALAH. A drawn battle was fought here on the 13th January 1849, between the British and the Sikhs, where 14·2 per cent. of the British soldiery fell in the action. It lies between the Chenab and the Jhelum rivers.

CHILI PINE, *Araucaria imbricata*. The harsh, rigid, scale-like and persistent foliage of dark green, and its singular mode of branching, render this tree very conspicuous. The seeds, borne in large round cones, are eaten in Chili, where it forms widespread forests between lat. 37° and 48° S. The cones are about the size of a child's head, each enclosing between 200 and 300 nuts; and not unfrequently twenty or thirty cones are borne on a single tree, so that eighteen *Araucarias* are reckoned to maintain a single person for a whole year. The nuts, in form like an almond, but twice the size, are eaten by the Indians either fresh, boiled, or roasted, the latter mode of cooking giving them a flavour something like a chestnut. It might be introduced into India.—*Dr. Poeppig*.

CHILIVA. HIND. The Indian bleak of N.W. India, a lonely little fish, seldom reaching more than two or three ounces; he is active, playful, and ravenous; his appearance is like new silver (the scales being used in making false pearls), and he ranks among the most delicate at table. Lady anglers, with a long, graceful wand, whip for him with great success on fine clear evenings, near the cold season, with tiny midges of rainbow hue, begirt with gold tinsel. Five pounds' weight

and more of these pearly playthings have been the reward of a lady party on one evening, caught without much exertion from a boat, and under the shade of contiguous topes and groves, along the river Rapti. Besides the artificial fly, the chiliva greedily seizes everything from a mosquito to a butterfly; and a grub or flesh maggot, a bit of paste, or a large grain of tough rice, are equally good. He is essentially a surface fish, active and cleanly in his predilections; of a delicate constitution, he soon dies after handling, especially if he has been hooked. The casting net is the proper *modus operandi* to get stock fish for a water, and the supply should be kept very few together, or they will rapidly die; earthen pans carried on a pole across a man's shoulder by night are best. This fish is very prolific, but his enemies are abundant in proportion. From his surface habits, he falls an easy prey to the ducks, fish-hawks, kingfishers, snakes, turtle, etc. To feed them or cause them to congregate, burn a little ghi or fat in a pot over the fire, and when it begins to smoke, empty out the contents on the pool or lake, and the chiliva will soon be seen hunting this new food on the surface. Coarse flour slightly melted and thrown in will also attract a great number; the casting net thrown on the spot will gather quite a silvery load. The Indian angler prizes the little chiliva beyond all his confreres, for he is the shining *bonne bouche* which, when properly spun on a first-class rapid, tempts the majestic mahseer of discreet 50 to 120 lbs. from all his propriety, or seduces the golden-eyed bokhar of 20 to run amok.

CHILKA - DUDUGU. TEL. *Guatteria cerasoides*, *Dm*; *Unona discolor*, *Vahl*.

CHILKA LAKE, a marine lagoon in the Orissa and Ganjam districts on the north-western side of the Bay of Bengal. It bounds the Northern Circars on the north. It seems to be the result of a breach of the sea over a flat sandy shore, whose elevation is something above the level of the country within. Pulicat lake appears to have had the like origin. Each of them communicates with the sea by a very narrow but deep opening, and are shallow within. The Chilka lake, extending from lat. 9° 28' to 19° 56' 15" N., is about 44 miles in length from N.E. to S.W., and in most places 12 or 15 miles wide. It is at the extreme end of the Puri district, just where it touches the Presidency of Madras. It is separated from the Bay of Bengal by a long sandy ridge of a few hundred yards in breadth, against which the force of the south-west monsoon expends itself in vain. Its area varies from 344 to 450 sq. m., during the dry and rainy seasons respectively. It is dotted with half-formed islands, and hardly anywhere exceeds six feet in depth. Here and there there is a forest of reeds and high grasses, and in some places the lake is fringed by picturesque and wooded hills. It is annually frequented by numbers of waterfowl.—*Remell's Memoir*, p. 242.

CHILKI. HIND. A rupee of Kashmir, value ten annas.

CHILLA. HIND. *Casuarina tomentosa*.

CHILLA CHETTU or Indupu Chettu. TEL. *Strychnos potatorum*, *L.*

CHILLA GADA, also Grasugada. TEL. *Batatas edulis*.

CHILLAH, the fortieth day after childbirth, on which a Mahomedan woman performs her

purifications. It is the forty days of Lev. xii. 4.—*Herkl.*

CHILLA-JAIDAR, a kind of silk of Bokhara.

CHILLAMA COOR. A small village, 193 miles from Madras. Earth salt is abundant.

CHILLANKI. TEL. *Inga umbellata*, Willd.

CHILLAR. HIND. The husk, skin, or rind of fruit, grain, etc.

CHILLAR. HIND. Small money or change; it corresponds also to the English word 'upwards', as a hundred rupees and upwards,—*sao rupai challar*.

CHILLHA. HIND. A holy place where a fakir sits, so called from the initiatory Chihla (40) days' abstinence. It is also known as a fakir's takia.—*Elliot*.

CHILLIES.

Capsicum,	ENG.	Lombok; Chabai, MALAY.
Cayenne pepper, . . .	"	Lada mera; Lada china, "
Mirch,	HIND.	Mollaga,
Lombok,	JAV.	Mirapa-kaialu, . . . TEL.

Chilli is the Mexican name for all varieties of capsicum, though they are natives of the East and West Indies, and other hot climates. *C. annuum* is the species commonly noticed, but there are numerous varieties which, by many, are reckoned species. Thus *C. frutescens* is a shrubby plant, which grows to a large and more bushy size; *C. minimum* supplies the variety called bird pepper; *C. baccatum* has a globular fruit, and furnishes cherry or berry capsicum. They are all of the simplest culture; but culture appears to increase the size, and to diminish the pungency of the fruit. Their acidity is owing to an oleaginous substance called capsaicin. When the fruit is fresh, it has a penetrating acrid smell; is extremely pungent to the taste, and produces a most painful burning in the mouth. When dried, they form a large article of local and foreign traffic, and form the basis of cayenne pepper; but in vinegar, when green or ripe, they are an acceptable pickle. In Bengal, the natives make an extract from chillies, which is about the consistence and colour of treacle. In all Southern and Eastern Asia both rich and poor daily use them, and they form the principal ingredient in all chatnis and curries; ground into a paste between two stones, with a little mustard, oil, ginger, and salt, they form the only seasoning which the millions of poor in those countries can obtain to eat with their rice. They are worth about 40s. the candy of 600 lbs. Cayenne pepper is used in medicine chiefly in the form of tincture, as a rubefacient and stimulant, especially in cases of ulcerated sore-throat. It acts on the stomach as an aromatic condiment; and when preserved in acetic acid it forms chilli vinegar. Red pepper may be considered one of the most useful vegetables in hygiene. As a stimulant and auxiliary in digestion, it has been considered invaluable, especially in warm countries. Immense quantities of the capsicum are used by the native population of the West Indies, Africa, and Mexico; the consumption there as a condiment being almost universal, and perhaps equal in quantity to salt. The 'wort' or cayenne pottage may be termed the national dish of the Abyssinians, as that or its basis 'dillock' is invariably eaten with their ordinary diet, the thin crumpet-like bread of teff or wheat flour. Equal parts of salt and the red cayenne pods are powdered and

mixed together with a little pea or bean meal to make a paste. This is called dillock, and is made in quantities at a time, being preserved in a large gourd shell, generally suspended from the roof. The wort is merely a little water added to this paste, which is then boiled over the fire, with the addition of a little fat meat and more meal to make a kind of porridge, to which sometimes is also added several warm seeds, such as the common cress or black mustard, both of which are indigenous in Abyssinia. A kind called the Tobago red pepper is said to possess the most pungent properties of any of the species. It yields a small red pod, less than an inch in length, and longitudinal in shape, which is so exceedingly hot, that a small quantity of it is sufficient to season a large dish of any food. Owing to its oleaginous character, it has been found impossible to preserve it by drying; but by pouring strong boiling vinegar on it, a sauce or decoction can be made, which possesses in a concentrated form all the essential qualities of the vegetable. A single drop of this sauce will flavour a whole plate of soup or other food.—*Johnston's Abyssinia; O'Sh.; Faulkner; Simmonds*, p. 429. See Capsicum.

CHILLOUNEA, a singular tree of Nepal. Its upper coat is entirely composed of innumerable needle-form fibres, partially united by a kind of gelatinous sap. The wood makes good beams and rafters, and is held in such estimation by the natives, that no house is considered secure in which more or less of the timber has not been employed.—*Smith's Nepal*.

CHILLUM. HIND. A pipe bowl, a hookah bowl.

CHILON. HIND. *Populus ciliata*.

CHILRAI, also Khatrow, *Picea* (*Abies*) *Webbiana*, *P. pindrow*, the silver fir.

CHILTA-RITA. TEL. *Phoenix farinifera*.

CHILUCHI. HIND. *Iris Nipalensis*.

CHILU NUTIYA. BENG. *Amarantus polygonoides*.

CHIMA - PUNJI. MALEAL. *Cochlospermum gossypium*.

CHIMBARI. HIND. *Dactyloctenium Aegyptiacum*, *Elaeusine flagellifera*.

CHIMKANI. HIND. *Cathartocarpus fistula*.

CHIMNANU, of Lahoul and the Chenab, *Amygdalus Persica*, the peach.

CHI MOEE. CHIN. A bacchanalian game played at Chinese parties.

CHIMONANTHUS FRAGRANS. *Fortune*; the Lah-mei or Hwang-mei-hwa of the Chinese. This shrub is sometimes grafted. The flowers, mounted on brass wire, are the favourite winter ornament of Chinese women of all classes. The Chinese macerate the tree in water, and then polish it a beautifully black brilliant surface. It is a favourite in England, where it blooms in the open air at Christmas. It is quite common in China.—*Fortune's Tea Districts*, p. 79.

CHIMPANZEE, one of the *Simiadae*, which approach near to man. The term has been applied to the *Simia satyrus* of Linnæus, the oriental orang, but it is now generally restricted to a West African genus, the *Troglodytes niger* of Geoffrey, the *Homo troglodytes* of Linnæus.—*Engl. Cyc.* p. 1015. See *Simiadae*.

CHIMU, also Chimyaka. HIND. *Syringa emodi*, *Morus serrata*, *Podophyllum emodi*.

CHIMURUDU. TEL. *Cadaba Indica*, *Lam.*

CHINA. HIND. *Panicum miliaceum*.

CHINA, the empire in the centre and east of continental Asia, known to Europe by this name, is called by the western Mongols, Cathay; by the Manchu Tartars it is called Nikan Kourn; and by the Chinese Tchoung-koué, the last term meaning the Central Kingdom (Duhalde, Hist. of China, p. 1), also Tchoung-kuo, the Empire of the Centre. According to M. Huc (i. pp. 349-350), the Chinese also name it Tchoung-hou, or Flower of the Centre; also Tien-hia, the Beneath the Heavens, or the world, as the Romans called their dominions Orbis. The name most in use is Tchoung-koué. It is also, however, called Tang-shan, the Hills of Tang (the name of one of their most celebrated dynasties). The present reigning family has given it the name of Tat-sing-kouo, the Empire of Great Purity; and in government proclamations, especially in those addressed to Barbarians, it is often called Tien-chao, the Celestial Empire. Other figurative appellations are Tchoung-thang and Tien-chao, Heaven's Empire. The natives call themselves Chung-kuo - teih - jin, men of the middle kingdom; also Han-jin and Tang-jin, men of Han or of Tang (from the dynasties of those names). China is supposed to be the country mentioned as the land of Sinim in Isaiah xlix. 12. Chinese annals extend back for three or four thousand years. Fo-hi is the first named sovereign of the Chinese, but the date of his reign is not ascertained. Yu the Great is the first monarch of whose reality there is no historic doubt. Their Bambus-book contains the record of the ancient imperial dynasties from B.C. 1991 to A.D. 264:—

- 1st. Hia, the first emperor Yu beginning B.C. 1991, reigned 432 years.
- 2d. Shang, began B.C. 1559, lasted 509 years; 28 reigns in 15 generations.
- 3d. Tcheu, began B.C. 1050, lasted 479 years. The 12th emperor Yeu Yang began to reign B.C. 781. His sixth year was B.C. 776. Confucius lived under this dynasty, and he recorded the observations of the solar eclipses from B.C. 481 upwards to 720.
- 4th. Tsin, began B.C. 255, and lasted to 207, 49 years.
- 5th. Han, began B.C. 206, and lasted to A.D. 264, a total of 469 years.

But systematic Chinese history hardly goes back so far as the reign of Yu, who was the founder of the dominion of the kings or princes of Shen-si in S. China, as far as the great river. He diverted the course of the Yellow River to fertilize the lands between the two rivers.

Prior to Chi-hoang of the Tsin dynasty, about 255 years B.C., the country had been subdivided into numerous principalities and commonwealths, but that warrior emperor brought them all under subjection. He built the Great Wall to keep off the Tartars. Sores, which Horace and the ancients used, seems to have been strictly applicable to some nation in the west of China, and many authors have surmised that the term China (Cheena) was given to the country when the Tsin dynasty carried their arms to the west. China (Cheena) was early given by the people of the N.W. of India to the nation which Europe now calls China.

The Tsin dynasty was overthrown by Lin-pang of the Han province, who was the first of the Han dynasty. With the destruction of the Tsin dynasty great injury resulted to the Chinese annals; but most of the Han princes were muni-

ficent patrons of literature. During the reign of Ming-ti, the 15th of the Han dynasty, considerable intercourse was carried on between the princes of India and China; but it was particularly during the dynasties of Sum, Leam, and Tam, from the fourth to the seventh centuries A.D., that princes from Bengal and Malabar northwards to the Panjab sent embassies to the Chinese monarchs. Nearer our own times, the Ming and Tsing dynasties have ruled from A.D. 1368 to the close of the 19th century, viz.:

Kwo-Hiau, or reigning title.	Miao-Hiau, or Temple Title.	Began reign, A.D.	Reign, years.
Ming Dynasty—			
Hung-woo, . . .	Tai-tsoo, . . .	1368	30
Kien-wan, . . .	Kien-wan-te, . . .	1398	5
Yung-lo, . . .	Tai-tsung, . . .	1403	22
Hung-h, . . .	Jin-tsung, . . .	1425	1
Sinen-te, . . .	Sinen-tsung, . . .	1426	10
Ching-tung, . . .	Ying-tsung, . . .	1436	21
King-tai, . . .	King-ti, . . .	1457	8
Ching-hwa, . . .	Hien-tsung, . . .	1465	23
Hung-chi, . . .	Hiao-tsung, . . .	1488	18
Ching-ti, . . .	Wu-tsung, . . .	1506	16
Kia-tsung, . . .	Shu-tsung, . . .	1523	45
Lung-king, . . .	Muh-tsung, . . .	1567	6
Wan-le, . . .	Shin-tsung, . . .	1573	47
Tai-chang, . . .	Kwang-tsung, . . .	1620	1
Tien-ke, . . .	Ho-tsung, . . .	1621	7
Tsung-ching, . . .	Hwa-tsung, . . .	1628	16
Tsing Dynasty—			
Shun-chi, . . .	Changhwang-te, . . .	1644	17
Kang-he, . . .	Jin-hwang-te, . . .	1661	61
Yung-ching, . . .	Hien-hwang-te, . . .	1722	14
Keen lung, . . .	Shun-hwang-te, . . .	1736	60
Kia-king, . . .	Jui-hwang-te, . . .	1796	25
Taon-kwang, . . .	Zhim-zung-jan, . . .	1821	29
Heen-fung, . . .	Wan-zung-chien, . . .	1851	10
Tung-che, . . .	Mu-zung-i, . . .	1862	13
Kwang-shu, . . .	...	1876	...

Origin and Early History.—All the ancient traditions of the Chinese refer to their migrations from the west. Chevalier Bunsen (Report, Brit. Assoc., 1847) says that, according to Chinese traditions, Tibet is the land of their earliest recollections. But the first settlers of this race in China were probably emigrants from the lands lying to the south of the Caspian. An early relationship existed between Chinese and Mesopotamian culture, among the most striking proofs of which are the facts that 'the primitive Chinese, like the Babylonians, recognised five planets besides the sun and moon, and, with one exception, knew them by the same names;' and 'a comparison between the ancient names of the months given in the Urh ya, the oldest Chinese dictionary, with the Accadian equivalents, shows, in some instances, an exact identity.' A number of ethnological and linguistic facts point to the Chinese having left a home in the south of the Caspian Sea, where they had been brought under the influence of Accadian culture. From this resting-place they moved eastward about the twenty-fifth century B.C., probably in consequence of the invasion of Susiana by some possibly Turanian tribe, and finally struck the northern bend of the Yellow River, the course of which they followed until they reached the fertile plains of Shen-si. The Chinese immigrants found the country in possession of a number of Taic tribes, such as the Kwei, Lung, Pung, and Li, all of whom possessed a certain amount of culture. With these tribes they contended for dominion, and by force of a superior civilisation gained the mastery over them. The relations thus established produced effects

which have left their mark on the history of the nation through all time. In the language at the present day, as well as in the traditions and customs now existing, are reflected traces of this intermingling of races more than four thousand years ago. The admixture of Taic blood was also of paramount importance to the Chinese; and they owe much of their endurance as a nation, and of their superiority in mental and bodily physique, to the constant introduction of new blood into the national life. They have a tradition of a deluge, B.C. 2357, in the reign of Yaou. The first settlement of the immigrant Chinese was in the northern portion of Chih-le; and Chinese legendary history tells us that Yaou, who reigned 4200 years ago, had his capital at the city of Tsin-chow, situated about 100 miles only to the south of the present capital, Peking. From this the people spread gradually westward and southward, colonizing the newer regions, and displacing the aboriginal inhabitants.

Extent of China.—The territorial distinctions of China proper and the Chinese Empire have existed from the earliest periods of Chinese history. China proper has meant, at all periods, that portion of the east of the Asiatic continent which has been possessed and permanently occupied by the Chinese people. The Chinese Empire has meant, besides China proper, those large portions of the whole Asiatic continent occupied by Tartar nomades or other non-Chinese peoples, but which have from time to time been under the sway of the Empire of China, and more or less directly ruled by Chinese officers and armies. China proper has at all periods been characterized by Chinese civilisation; that is to say, its population generally, besides being physically of the same race, has always been governed in its domestic, its social, and (with the exception of some very short periods) its political life, by the principles and rules laid down in the Chinese old sacred books. The non-Chinese peoples of the Chinese Empire have, on the other hand, at all periods either been destitute of anything that could be called civilisation, or have been slightly tinged with Chinese civilisation, or have been marked by some different civilisation, as for instance at present, in the inhabitants of Turkestan by a Mahomedan civilisation, and the inhabitants of Tibet by one strictly Buddhistic. At present China proper and the Chinese Empire are supposed to be 3,010,400 square miles in extent, and may be noticed under three territorial divisions:

China proper, as the empire existed under the Ming dynasty, which ruled in China from A.D. 1368 until the Manchu conquest in A.D. 1644.

Manchu, or, as known in Europe, Manchuria, the country of the reigning dynasty.

Colonies of China, in Mongolia, Soungarra, Eastern Turkestan, Tibet, and the countries of the several tribes bordering on Kan-su and Sze-chuen.

China proper is the largest as well as the most compact country in any part of the globe, extending in length from about lat. 19° to about 42° N., and in breadth (taking one extremity, where it borders upon the peninsula of the Corea) from about long. 125° (taking the other extremity, where the Great Wall extends to the west) to about long. 85° E., being 23° in lat. and 39° in long. The area given by Sir George Staunton is

1,292,000 miles. A recent estimate is 1,534,953 English square miles; and in 1844 its revenue, 191,803,139 taels = £63,934,713.

It is separated on the north by the Great Wall from the desert lands of the Mongol tribes, and from the scarcely less dreary Manchu country; on the east is the Gulf of Pe-che-li, the Eastern Ocean, and the Formosa channel; on the west barbarous tribes; and S.W. are the kingdoms of Tonquin, Cochinchina, Burma, and Laos.

In the course of ages the Chinese Empire has varied greatly in extent. It has been more than once larger than it is even now. It was so, for example, about 2000 years ago, under the fifth emperor of the Han dynasty, when it embraced the greater portion of inhabited Asia east of the Caspian Sea, and inclusive of Siam, Pegu, Cambodia, and Bengal. In the intervals between these great extensions, it has shrunk up to the size of China proper, and even this latter has been occasionally subdivided for considerable periods under two or more ruling families or dynasties, each acknowledging no superior. But the Chinese people has continued the same, even when under several rulers, and has been steadily increasing its territorial possessions. They have annexed all the parts neighbouring on China proper from Manchu and Mongol races. The dynasty now is Mongol, and the army Manchu, and furnishes Manchu soldiers in Mongolia and Tibet.

Government.—The idea of the family is the grand principle that serves as the basis of society in China. Filial piety, the constant subject of dissertation to moralists and philosophers, and continually recommended in the proclamations of emperors and the speeches of mandarins, has become, in the views of the Chinese, the fundamental root of all other virtues. All means are made use of to exalt this sentiment, so as to make of it an absolute passion. It assumes all forms, mingles in all actions, and serves as the moral pivot of public life. Every crime, every attempt against the authority, property, or life of individuals, is treated as filial disobedience; whilst, on the other hand, all acts of virtue, devotion, compassion toward the unfortunate, commercial probity, or even valour in battle, are referred to filial piety. To be a good or a bad citizen, is to be a good or bad son. This grand principle dominates and penetrates more or less deeply all the strata of society. The emperor, as the head of the family system on which Chinese political life is based, is responsible only to the gods. In civil cases the last appeal is to the emperor, and the registers of capital offenders are submitted to him. The names of the officials who merit promotion or disgrace are likewise submitted to him. He is called Hoang-te, August Sovereign, or Hoang-chou, August Elevation; but his name *par excellence* is Tien-dza, or Tien-tsze, Son of Heaven.

The empress of China, on the other hand, is the representative of mother earth. She is supposed to be ignorant of politics, and occupies herself in feeding silkworms, winding silk at the cocoon festival, and inspecting the silk stuffs woven by the women of the imperial household.

China has 18 political divisions,—Shang-tung, Pe-che-li, Shan-si, Shen-si, in the north; Kwang-tung and Kwang-si in the south; Che-kiang, Foh-kien, and Kiang-su, in the east; Kan-su, Sze-chuen, and Yun-nan, in the west; and Nang-

hui, Kiang-si, Hoo-nan, Hu-peh, Ho-nan, and Kwei-chu, as midland provinces.

Executive Civil Government.—The entire administration is under the direction of two councils, attached to the person of the emperor, the Nei-ko and Kiun-ke-tchou. The first is charged with the preparation of plans, and the despatch of current business. Its duty is, according to the official book, 'to put in order, and to make manifest the thoughts and designs of the imperial will, and to regulate the forms of administrative decrees.' It may be regarded in some measure as the secretariat of the empire. The second council, named Kiun-ke-tchou, deliberates with the emperor concerning political affairs. In the Nei-ko, or Interior Council Chamber, are four chief councillors, two of them Tartars and two Chinese, who bear the titles of Choung-thang and Ko-laou. The Tartar minister presides.

Loo-Poo is the general appellation for the six civil and criminal tribunals of China. The first of these, properly termed Loo-Poo, has four departments for the administration of the provinces; the second, named Hoo-Poo, takes charge of the imperial revenues; the third board is named Lee-poo; Ping-poo-war is the fourth; King-Poo, the criminal department; Kung-Poo, or public works, being the fifth and sixth.

The provinces of the country are each under a governor, or, where two provinces are united, a governor-general. Every province is divided into a certain number of districts, called 'Fu,' 'Ting,' 'Chow,' 'Heen.' A 'Fu' is a large portion or department of a province under the general control of a civil officer, immediately subordinate to the head of the provincial government. A 'Ting,' a smaller division than, and sometimes a portion of, a 'Fu'; when separate, it is governed as a 'Fu,' and called a 'Chuh-le.' A 'Chow' is similar to a 'Ting,' as also a 'Heen,' but each is a smaller division. Each 'Fu,' 'Ting,' 'Chow,' or 'Heen' has one or more towns or walled cities under its guidance, one of which takes its name and rank as 'Kwang-Chow-Fu' and 'Shang-Hae-Heen,' which latter, although of that subordinate rank, is the largest maritime city in the empire, and the greatest resort of the native ships or junks. But with all these, there has, besides, always remained a powerful and vivacious spark that the Tartar government has never been able to extirpate; and secret societies have been formed all over the empire, the members of which have seen with impatience the Manchu domination, and cherish the idea of overthrowing it, to obtain a national government.

Titles.—Also, there are five orders of nobility, the kOUNg, heow, paak, tze, and nan, which correspond to the duke, marquis, earl, baron, and baronet of Britain. Each of these has classes. The Kee-Too-Wye is a lower grade, and the Wan-Kee-Wye a still lower. Other grades of rank are arranged as Chung or Tsung-deputy. Hereditary titles only exist for the imperial family and for the descendants of Confucius, who are still very numerous in the province of Shang-tung. Of the twelve orders of the Imperial nobility of China, tsin'w'n is the first, kiui-wang the second, beileh third, beitsch fourth, chin kwoh kung fifth, f-kwoh kung sixth. To the hereditary titles which the relations of the emperor enjoy, there are attached certain prerogatives, as well as a very modest allow-

ance, the right of wearing a red or yellow girdle, of putting a plume of peacock's feathers in their caps, and of having six, eight, or twelve bearers to their palanquins. They cannot, more than any other citizen, pretend to any public office, without having previously taken their literary degree at Peking and Moukden, the capital of Manchuria. Many of these nobles are to be seen living in idleness and penury on their small pensions, and having no other proof to show of their illustrious origin than the red or yellow girdle. A private tribunal, however, is charged to govern them and superintend their conduct.

The first civil and military mandarins who have distinguished themselves in the administration or in war, receive the titles of kOUNg, heow, paak or phy, tze, and nan. All the officers, civil and military, of the Chinese Empire are divided into nine orders, khiou-ping, distinguished one from the other by certain buttons, or rather balls, of the size of a pigeon's egg, which are worn above the official cap. This distinctive ball is of plain red coral for the first order, of carved coral for the second, of a translucent deep blue stone for the third, of pale blue for the fourth, crystal for the fifth, of some opaque white stone for the sixth, and for the seventh, eighth, and ninth, of gilt and wrought copper. Every order is subdivided into two classes, the one active and official, the other supernumerary; but this makes no difference in the balls. All the official personages comprised in these nine orders are designated by the generic term of kouang-fou. The term mandarin was invented by the first Europeans who visited the country, and is probably derived from the Portuguese word 'mandar,' to command. The people are all partial to honours, and ornamental arches are raised to men and women who distinguish themselves.

The punishments for crimes are very severe, many are brutal. They transport and flog for petty larceny, use torture to extort confessions; use cages, the cangue, and fetters; chain the criminal to heavy stones and to iron bars; leave the food supply to chance; cut off the ear, or cut the person to pieces at 8, 24, 36, 72, and 120 cuts; decapitate and strangle. The prisons of China may be considered as unequalled upon earth, so far as everything that is most abominable is concerned.

Races.—The great races in the empire are three, the Chinese, the Mongol, and the Manchu. These nations differ very considerably in their physical characters, although much mixture has taken place. The northern or predominant nation appears to have a fundamental tendency to an Iranian modification of the Turanian type; and the same tendency is observable amongst the Coreans and the higher classes of the Japanese, as amongst some of the American, Tungusian, and Asianesian peoples. In the south of China, the fundamental tendency is to an extreme flatness of features, the nose being often more insignificant and shapeless than in any other race, although the finer type also occurs. In the eastern maritime province, the northern type is much more common. The dominant or northern Chinese race is much less Mongolian than the S. Chinese, the Malay, and most of the intermediate ultra-Indian races. They are closely allied to the Japanese and Americans, and, indeed, are evi-

dently the same race, however much their language differs. The predominating colour of the skin of the Chinese is yellow; but yellow, brown, and sometimes a maroon tint occur. The face is broad and flat, cheek-bones projecting, irides black, eyes oblique, beard scanty, stature above that of the Malay and Tibetan, below that of the European. The Chinese head, when viewed from the front, has a strongly-marked physical relation not only to all the races of the Mongolian type, but in a much closer or more special manner to the Tibetan tribes, the American Indians, and some of the eastern Asianesian tribes, in all which one of the prevailing Chinese types may be traced. Numerous examples of the elongated head, obtusely wedge-shaped cranium, and arched nose of America and New Zealand may be seen in every assemblage of Chinese in Singapore. The occipital truncation remarked in America and Polynesia is common in South-Eastern Asia. It is very strongly marked in the Lau race. The Tibetan tribes have the rise of the skull at the coronal region, but the other characteristics are wanting. The heads of the American men of Dr. Prichard's *Natural History of Man* resemble those of the Chinese. The prominent lateral expansion of the zygomæ is comparatively rare in the Chinese as in the Americans. The Sumatra Malays have much more frequently the typical Mongolian head, as have also the allied tribes of the Irawadi basin, with whom they are most nearly connected, and whence they have undoubtedly derived their physical stock.

The sea-coast people are skilful and enterprising, with that self-reliance which enables nations to emigrate; and we find them swarming in the Malay ports, in Singapore, Borneo, and the Philippines; numbers are in Australia, the West Indies, Sandwich Islands, and Western America, particularly California. But, except in Buddhist Burma, they are not settlers, only forming temporary connections, sending all their savings, and looking forward to return, to their native land. Next to the Malay, this people have been the most formidable pirates of the eastern seas. Their rapid and wide diffusion is one of the most remarkable of the events of modern history, and is likely to exercise a great influence on the future condition of man. For the Chinese do not migrate to mingle with and be absorbed among other tribes and peoples: they preserve their own language, their one nationality, their own costume and religious usages, their own traditions, habits, and social organization. Though they intermarry with the races among whom they dwell, the Chinese type becomes predominant, and the children are almost invariably educated on the father's model, the influence of the mother seeming almost annihilated. And though the Chinese frequently acquire large fortunes, great influence, and sometimes high rank as a consequence of their prosperity, the ties that bind them to their country seem never to be broken, and the tides of population flow Chinaward with every south-western monsoon, to be replaced by a stronger stream when the monsoon of the north-east sends the junks on their wonted way towards the south. It is estimated that in the kingdom of Siam there are more than a million and a half of Chinese settlers; in the city of Bangkok alone there are supposed to be two hundred thousand. In fact, all the

active business appears to be in their hands. Nine out of ten of the floating bazars which cover for miles the two banks of the Meinam, are occupied by Chinamen; very many of them are married to Siamese women, for a Chinawoman scarcely ever leaves her country. But the children are invariably educated to the Chinese type; the tail is cultivated if it be a boy, and the father alone seems to model the child's nature and education. Yet that strong parental affection which has been remarked as one of the characteristic virtues of the Chinese, is almost invariably exhibited. Fathers are constantly playing with and carrying about their children, encouraging their gambols, and teaching them to observe.

Several estimates of the population of the country have been attempted since the latter part of the 16th century. Captain Gill, a traveller in the 19th century, and who, in 1882, was murdered by an Arab shaiikh, is of opinion that they have all been too high. Famines, with rebellions of the Tae-ping and of the Mahomedans in Kwei-chow and Yunnan, are supposed to have reduced the nation to 250 or 300 millions.

1570 ? 307,467,000 in the reign of Kien lung Wong.
1743, 200,000,000 Grosier.
1813, 360,000,000 Census.
1842, 414,686,994 „

According to Mr. Knowlton, the census of 1839, as given by M. Sacharoff of the Russian embassy in Peking, made a population of 415,000,000. A census was found in Governor Yeh's Yamun at Canton; and the Chinese commissioners at Tientsing, in 1859, stated the population at 400,000,000, which is a fourth of the human race, twice the population of British India with its feudatories, and seven times that of Russia. China proper has 280 to the square mile, while that of Britain and Ireland has only 260.

Tribes.—The various types of race on the mountain frontier of China, Burma, and Tibet, possess the highest interest for all ethnographical students. Of the aboriginal inhabitants of China, the Kwei people, remnants are to be found to this day in Northern Cambodia. These Kwei, whom M. Terrien de la Couperie conjectures to have been an Aryan people, possessed a literature to which the term Kwei shoo or 'Kwei Books' probably refers.

The country at the mouth of the Amur in 1842 was ceded to Russia by the Chinese, but members of the *Aino* family are settled there, and due north of Peking is a Mongol tract which nearly separates the true Tungus part of Manchuria.

The *Hakka* inhabit Loong-Moon, Toong-Koong, Tseng-shing, and other districts. They eat dog's flesh.

The *Tan* are a race of Chinese boatmen dwelling in their boats in all the Chinese rivers, similar to the Yao and Man tribes. Their physique is vastly superior to that of the house population, who designate them *Suee Ki*, or waterfowl.

The *Ng-Tsoek* are a tribe in China who undress and bathe and re-clothe the dead. They are deemed unclean, and are not permitted to worship in the temples; their sons are not allowed to become candidates for literary degrees. They resemble the pollinctores of the ancient Romans.

Miau-tsi is a term applied to the hill tribes of China. They seem to be in small clans; no less than 82 of them residing in the small province of

Kwei-chu. Some of their names are appellatives, —Sang, wild; Heh-sang, black wild; Heh-kioh, black foot; Yan-jin; and others are the Nung, the Lo-Lo, and Yau in the mountain ranges of S.W. China. The *Miau-tzi*, on the south of Szechuen, are said to be wild mountaineers, but much connected with them is obscure. Friar Odoric noticed the differences between the races on the two sides of a great mountain. Polo also speaks of savage cannibals with blue-painted (*i.e.* tattooed) faces in Foh-kien; and some observations of Sir John Davis corroborate this (Polo, 178; Chinese Supp. p. 260). In the modern Chinese census, one class of the population in a district of the province of Canton appear as blacks (Chin. Mod. p. 167). Indeed, Sernedo (about 1632) says there was still an independent kingdom, presumably of the *Miau-tai*, in the mountains dividing Foh-kien, Canton, and Kiang-si, viz. those of which Odoric speaks (Rel. Della China, p. 19), certain F'ung people who once visited the court of the Chinese emperor, and delighted him by their dancing and singing. These F'ung people still exist in South-Western China.

Its Army, of 800,000 men in four divisions, is made up of 68,000 Manchu, 80,000 Mongol, and 625,000 Chiucse. The banner-men of the Mongols are the *elite* of the dominant Manchu. The Chinese soldiery are in two bodies, one of which, about half a million in number, is designated soldiers of the green flag, and receive pay of four silver taels (27s.) per month; the other portion are a militia, holding lands for service, and drilled for a month once a year. Since the year 1878, they have obtained from Europe, swift, heavily-armed gunboats. Military Feudatories of the empire are scattered through the regions known to the Chinese geographer as Inner and Outer Mongolia, Uliasutai, and Tsing Hai or Koko-Nor; but there are also the troops of Tibet, under the resident minister of that country. The tribes acknowledging the sway of China are divided into Inner and Outer Mongolians. The former occupy the region to which their name refers them; the latter, all the other tracts and districts above mentioned.

Inner Mongolia, lying between the desert of Gobi and the continuous frontier of Manchuria and China, was occupied, in 1812, by 24 tribes, differing in name, irregularly ranged under 49 standards, and divided, in uneven proportions, into 6 chalkan or leagues.

The *Outer Mongolians* were,—1st, four tribes of Kalkas of different names, under khans, which, with two fragmentary tribes attached to them, formed four leagues; they numbered in all 86 standards, and resided in the territory north of the desert of Gobi, geographically named Outer Mongolia. 2d, Eleven tribes, not in leagues, under 34 standards, scattered to the west of the Holan mountains, in the S.W. of Inner Mongolia, to the south of the Altai, and to the north of the Teng-kiri ranges. 3d, Two tribes of Mahomedans, under 2 standards, at Hami and Turfan, within the provincial boundaries of Kansuh, south of the Celestial Mountains; and 4th, Five tribes under 29 standards, round Koko-Nor, called by the Chinese Tsing-Hai, or Azure Sea. Colonel Gordon, who had taken a prominent part in suppressing the Tae-ping rebellion, recently returned to China to advise the great viceroy, Li-Hung-Chang, regarding the Chinese forces. The occasion was

the retention by Russia of the town and district of Kuldja, and war appeared possible. He urged them to avoid pitched battles, to cultivate skirmishing, to throw up earthworks, to harass the enemy by irregular warfare, and form a fleet of small and cheap ships.

Religions and Philosophies.—The Chinese have acquired, in the course of their long existence, more than one different kind of philosophy; that is to say, there exist in China several radically different ways of viewing the nature of the inanimate world and of man. The philosophic systems of Lao-tsze, of Kung-tsze, of Choo-tsze, of Mang-tsze, and of Buddha, take the place of religions, but none of these are pure philosophies; those recognised by the state being Taoism, Confucianism, Buddhism with its form Lamaism, and Mahomedanism. They are systems of morality.

There was a long struggle for mastery among the adherents of these three systems,—a struggle which expressed itself in mutual proscriptions and persecutions; but the Confucian (*Kung-tsze*) always succeeded in maintaining for itself the greatest ascendancy, except during some comparatively short period, and it became definitively paramount fully ten centuries ago. From that time to this it has continued dominant in the country. It has been the philosophy and morality of all the great historians of China, and has formed the basis of her peculiar national system of legislation and administrative procedure. It may be described as the assemblage of those fundamental beliefs which are entertained by all cultivated Chinese on the phenomena of animate and inanimate nature. The literature in which it is set forth, and which it has moulded, whether notological, psychical, ethical, legislative, or historical, is that exclusively an intimate and extensive acquaintance with which has for many centuries been made indispensable to the passing of the public service examinations, which are, for the talent and ambition of China, far more than the hustings, the avenues to church preferment, and the bar all combined, are for the talent and ambition of Britain. Hence Confucianism is, and has long been in the fullest sense of the terms, the national, orthodox philosophy and morality of the Chinese people. Taoist and Buddhist temples exist all over China, and in latter centuries Mahomedan mosques have been erected in many of its cities; but the dominant Confucianism merely endures Taoism, Buddhism, and Mahomedanism as erroneous and superstitious systems of belief, prevalent among, because most suited to, people of uncultivated or weak minds, whether rich or poor; but which find most acceptance among the poorer and therefore unlearned and unenlightened classes. They have no influence on the national polity. The people are in nowise prohibited from worshipping in the Buddhist and Taoist temples; in other words, they may regulate their purely religious life by the tenets of these, or indeed of any other sect. But where Taoism or Buddhism would leave the region of religion, and, in the form of philosophy or morality, extend their direct influence into the domain of the social science and art, there Confucianism peremptorily and effectually prohibits their action. Not only are the national legislation and administration formed exclusively on Confucian principles, it is by them also that the more important acts of the private life of the Chinese are regulated, as for

instance marriages. The cause of the prevalence of Mahomedanism in China, in spite of discouragements, lies in the fact that Confucianism says little or nothing of a supernatural world or of a future existence. Hence it leaves almost unsatisfied those ineradicable cravings of human nature, the desire to reverse and the longing for immortal life. That it has, notwithstanding its want of these holds on the human heart, maintained itself not simply in existence, but as the ruling system, is a fact that must, as soon as it is perceived, form for every true thinker a decisive proof of the existence of great and vital truths in its theories, as well as thorough soundness and wholesomeness in the practical rules which it dictates. By Chinese philosophy must be understood Confucian philosophy; and by Chinese morality, the moral principles rooted in that philosophy.

In order to get a distinct general conception of the Chinese philosophical literature, two epochs must be specially kept in mind. The first began with Confucius (Kung-tsze), who was born B.C. 551, and ended with Mencius (Mang-tsze), who died about B.C. 317. The second began with Chow-teen-ke or Choo-tsze, who commenced his labours about A.D. 1034, and ended with Choo-ke or Choo-tsze, who died in A.D. 1200. The first lasted for seven generations. It was separated by an interval of thirteen hundred years from the second, which lasted for five generations. Both were periods of revival of ancient learning and of further development. Both embraced several celebrated philosophers besides those mentioned, but in each case it was the originator and closer of the epoch who became most celebrated. The writers of the second epoch are often mentioned as the philosophers of the Lung dynasty; which latter was established in A.D. 960, about 70 years before Choo-tsze's labours began, and continued in possession of the sovereignty till A.D. 1271, about 70 years after Choo-tsze's labours closed. Confucius, though his name in the west became identified with Chinese learning, was by no means its originator. Authentic, though not full records, embodying ethical and political doctrines, extended back to B.C. 2357, or to about eighteen hundred years before Confucius; while the Chinese philosophy originated with Fuh-he, who lived, according to tradition, some twenty-three generations before the exact chronological era, which latter took place B.C. 2637 with the institution of the national cycle of sixty years. Allowing thirty years to a generation, this would place Fuh-he about B.C. 3327. It was he who substituted writing for the knotted strings that had previously formed the only means of record; and it was he who first established marriages and separate families. To him are also ascribed some civilisation labours of lesser but still great importance,—the division of the day into twelve She-shin, or watches, of two hours each. Fuh-he is therefore the founder of Chinese civilisation generally. But he is perhaps best known as the originator of the natural philosophy, and in particular as the author of the 'Eight Diagrams.' He constructed these after a careful and extensive survey of nature and its varied phenomena, as exhibited in the departments which we call astronomy, meteorology, physical geography, and natural history and after reflection on his own nature, physical and mental, and on the nature of men generally, as

manifested in the events of the social life around him. The Eight Diagrams consist alternately of whole and broken lines. They have never been read, but they have not the less been made the basis of an ancient system of philosophy and divination. Fuh-he's diagrams, as re-arranged, together with the short explications of the first monarch of the Chow dynasty and his son, form the basis or text of the first of the Chinese Sacred Books, the Yih-king. After an interval of six centuries, Confucius edited the Yih-king, and appended those annotations which have given the work its subsequent value. What philosophical views may have been attached to the Yih-king of Wan-wang and Chou-kung by the contemporaries of Confucius, we know not. That work, together with the other three works edited or compiled by Confucius, viz. the Shu-king books and the Le-ke, constitute the whole of the ancient literature of China which has come down to posterity, and who have it only, as it was explained, arranged or modified in passing through his hands. It is well known that he expressly repudiated portions of it, as containing doctrines adverse to the views which he held and strove to diffuse. The names only of some celebrated ancient books, one dating from the times of Fuh-he himself, have been preserved. It is these circumstances which constitute the labours of Confucius the commencement of a distinct literary epoch. Apart from the labours of Confucius himself, the permanent literary results of this, the first of the two great epochs to which attention has been directed, are contained in the collection of works called the Four Books, composed by different members of the school which he founded. The last contains a record of the ethical and political teachings of Mencius (Mang-tsze), who died about B.C. 317, and closed the first epoch.

Choo-tsze was the originator of the second epoch of philosophical development. To him is ascribed the merit of having revived that distinct knowledge of the greatest truths, which had been lost to the world for the thirteen centuries that had elapsed after the death of Mencius; and he regained that knowledge by the independent efforts of his own mind, unaided by any master. Only two of his works have been preserved, the Tea-heih-too-shwo and the Tung-shat. He died in A.D. 1200; and in A.D. 1241 an imperial rescript ordered his tablet, with those of four of his immediate predecessors whose works he had annotated, to be placed in the temple of Confucius, which is to be found in every district city throughout the empire. From that time his views of philosophy, morality, and politics have been supreme in China. His commentaries on the Yih-king and the Four Books are learnt by heart by millions of Chinese, with the text of these works. The public service examinations cannot be passed unless this be done.

The fact is, however, that though the authors of the first and second epochs, Confucius himself included, professed to teach only what was contained in pre-existing sacred books, and though they possibly themselves believed that they did only teach what was virtually contained in such pre-existing books, they nevertheless did, in each case, originate some entirely new views and doctrines.

The Yuen dynasty, which succeeded the Sung in A.D. 1271, were Mongols, immediate descendants of Chengiz Khan, who adopted Chinese civilisation only in a very slight degree, and were consequently soon expelled again. Choo-Yuen-Chang, the first emperor of the native dynasty, the Ming, which succeeded them in A.D. 1368, though a promoter of literature, was himself illiterate, having been a servant in a monastery. But the third sovereign of the line, who began to reign A.D. 1403, had a splendid library formed, and several encyclopædic works compiled. He published an edition of the Sacred Books, which is known by the affix to their title of 'Tatreuen,' in full completeness.

Religion.—Mahomedanism was introduced by an Arab, Wos-Kassin, said to have been Mahomed's maternal uncle; but the Mahomedans are neither zealous in the propagation of their doctrines, nor over strict in the observances of their religion. They are perpetually rising against the Government. In 1863 those living in the north went into open revolt, and spread a ruin and devastation not yet (1882) remedied.

Christianity penetrated into China as early as the 5th and 6th centuries; in the 13th it was very flourishing, and there existed at Peking an archbishop with four suffragans. The general who conquered Southern China is stated to have been a Nestorian Christian, and to have built a church at Nankin for those of his own faith. Marco Polo, a Christian, was in high favour. We learn from the Mahomedan travellers, who visited China as early as A.D. 850, that when Canton was taken and sacked in A.D. 877 by a rebel army, as many as 120,000 Mahomedans, Jews, Christians, and Parsees perished in the sack (Prinsep's Tibet, Tartary, and Mongolia, p. 10). The Chinese have also books of Christian doctrine, composed by ancient missionaries, and which, even in a purely literary point of view, are much esteemed in the empire. The Chinese designate the Christian religion as the religion of the Lord of heaven (Huc, i. xv. p. 68). A French missionary, who had been very much in the interior of China, stated the total number of native Christians at 500,000. M. Huc's estimate is 800,000, scattered over all China proper in small communities. They differ from their own countrymen in many of those social and domestic customs and in all those mental peculiarities which constitute the special nationality of the Chinaman. Dr. Knowlton has stated that if the present ratio of conversions goes on as it has for some years back, 'by the year 1900 the native Christians in China will number over two millions!' (Huc, Chinese Empire, i. p. 16). A popular uprising began in 1848. It originated in 1830 in the teachings of Mr. Roberts, an American missionary, and those of an earnest Chinese disciple. It became blended with the national struggle of the Tae-ping, or the votaries of 'the divine kingdom of eternal peace.' According to the writings of Hung, once a schoolmaster, but afterwards the 'Heavenly Prince' and acknowledged head, the convert, on coming to baptism, pronounced a solemn vow to take the belief in the Father, Son, and Holy Ghost for his rule of life, and to dedicate this life to God, in love to the brethren; while visits to the tombs of ancestors were enjoined, in gratitude for the release of their immortal souls from this trouble-

some life, and to renew the vow of life-long devotion to the cause of God and the brethren. The Bible was the word of God, the Ten Commandments the moral law, and opium-smoking a sin equal to adultery (Bunsen, God in Hist. i. p. 272). Chevalier Bunsen was of opinion that the Chinese worship of the dead is the sole connecting link between them and a future state. In their disbelief of immortality and of God, Quinet doubts if they have, in the past 5000 years, lived a single day (Bunsen, God in Hist. i. pp. 265-7). But the nation believe in spirits or disembodied beings, and Chinese officials address letters to their deities, which they despatch in a fire sacrifice. Their philosophies are noticed above.

Throughout China some vague idea is entertained by the people of the existence of one great being, whom they usually designate as Shang-ti, the Supreme Ruler, the Supreme Sovereign, or whom they call Tien, Heaven; and believe that he, by a fixed destiny, controls all affairs; and as such, Tien is taken to be an appellation of the godhead of men. The learned among the Chinese speak of him, as he is represented in their most ancient classics, as having no form, nor sound, nor savour, nor tangibility; and to their minds he appears divested of all distinct personality. The spiritual ministers of heaven they call Shin, expansive spirits, or Shin-ming, illustrious spiritual beings. They divide them into two large classes, of which one is the Tien-shin, or heavenly. But the whole number of these spirits are dependent upon, and ruled by, Tien, or the Supreme Ruler of heaven. They rarely build any temple for the worship of Shang-ti. Still the people universally pay to Heaven, or to Heaven's Lord, a sort of homage daily. Every Chinese house has a lantern suspended outside the street door, and directly over the middle of the doorway, which they call Tien kung-tang, Heaven's Lord's lantern, or simply Tien-tang, Heaven's lantern. These lanterns are all lighted up, and incense is burnt for him during a short time every evening. Also, one day in every year they profess to devote to his honour, the ninth day of their first month, which they call his birthday! Then they have plays acted to please him!

They have an idol. Kuo-tai-tsoo, the founder of the Ming dynasty, ordered the manufacture of a metallic figure of a man, 15 inches high, attired as a Taoist priest. This is carried in procession on the installation of every Chinese emperor. Three fingers of the left hand are placed in its mouth; and in the hand is a tablet inscribed, 'Fast for three days.'

The inferior state deities are—

Kuan-te, a distinguished general, the protector of the peace, who is now their god of war.

Lung Wong, or the Dragon King, a rain god.

Yuh Wang-te, or the Pearly Emperor, another rain god.

Mang-Chang, worshipped by schoolboys and collegians; god of learning.

Shing Wong, the protector of walled cities.

Hung Sing Wong, the deity presiding over the Southern Ocean.

Pih-te or *Pak Tai*, the great deity of the north.

Five genii preside over the five elemental substances, fire, earth, water, metal, and wood.

Tien How, queen of heaven.

Koon Yam, the goddess of mercy.

Kum Fa, the tutelary goddess of women and children; the Venus genetrix of the Chinese.

Shay Tseih, god of the land and of the grain.

Fung Fo Shan, the wind and fire gods.

Too Tee, the god of wealth.

Wang Teen is a deity to whom the Shu-king and She-king ascribe the attributes of omnipotence, omniscience, and immutability.

Poon Koo Wong, with the Chinese, the first parent, a division of the mundane egg. He breathed on gold and on wood, and from the vapour produced a son and daughter, Yong-Yee and Cha-Noee. Poon Koo Wong has many temples, and his image is carved in wood or clay.

Their chief festival occurs on their new year; their festival of Too-tee, of middle heaven, of Th'shat-t'sic, of the sun, of Wa-kwong, the god of fire, of Ching-yaong, the emperor's birthday.

Shu Yee is a Chinese festival of burnt-offerings to the souls of paupers.

San Lin is the new year festival; it is their bacchanalia. The new year commences with the new moon nearest to 15th of Aquarius, into which sign the sun passes in the month of January. They also hold as festivals the 1st and 15th day of each month. These bear some resemblance to the Mominia, or feasts observed by the Hebrews, Egyptians, Persians, Greeks, and Romans, and seem identical with the Hindu fortnightly ceremonies.

Then Nin, or *Wa Shun*, a Chinese festival held on the 28th or 29th of the 12th month, in which thanks are given to the tutelary deity of the house.

Tien Chung Ching Sit is the Chinese feast of the middle heaven.

Th'shat-t'sic, a Chinese festival held during the 15 days' observance of the Shu Yee, burnt offerings for paupers. It is held on the 7th day of the 7th month, in honour of the seven stars which the Chinese regard as goddesses, one of whom visited earth, and was married to, and lived for a time with a cowherd.

Literature.—The greatest counterpoise of the imperial power consists of the literary aristocracy, or corporation of men of letters, an ancient institution, which has been established on a solid basis, and the origin of which is at least as early as the 11th century before the Christian era. It may be said that the administration receives all its real and direct influence from this sort of literary oligarchy. The emperor can only choose his civil agents from among the lettered class, and in conformity with established arrangements. Every Chinese may present himself for the examination for the third literary degree, and those who obtain this may then become candidates for the second, which opens the way to official employment. To fill the higher offices, the prize must be obtained in the competition for the first degree. The corporation of lettered men, recruited every year by the method of examination, constitutes a privileged class, almost the only nobility recognised in China; and it may be considered as the chief strength and nerve of the empire. The famous imperial academy of Han-Lin is composed of literary graduates. It furnishes orators for the public festivals, and literary examiners for the province, and is supposed to promote the cause of learning and science generally.

Five canonical books were written or compiled by Confucius,—

1st. *Yih-king*, the Book of Mystical Combinations, a mystical form of writing on divination.

2d. *Shu-king*, or the Book of History, descends from B.C. 2400 to 281. It is in the character of a dialogue, and contains much of a didactic nature.

3d. The *She-king*, or Book of Poetry, a collection of poems, songs, and odes of inappreciable antiquity, to which Confucius attached great value as a means of moulding the national character.

4th. The *Le-ke* or Record of Rites, a national ceremonial; and the Chinese consider the observance of its ceremonies and usages to be essential to the maintenance of social order and the promotion of virtue.

5th. *Ch'un-Ts'ew*, or Spring and Autumn, a history of his time, and of several reigns immediately preceding it. The first four King were compiled and edited by Confucius; the last is an original work by the sage; but the fourth contains much from later hands.

The *Shu* are three books, in which the disciples of Confucius have recorded his conversations about poetry, history, and the rules of propriety; above all, about what concerned the growth of social virtue in the individual or the state.

In the year B.C. 213, the emperor Chi-wang-ti burned all the books in his dominions, excepting those on architecture and medicine. The sixth emperor after him, King-ti, commenced the restoration of all books, which Wou-ti, who succeeded him B.C. 140, urged on. The materials he collected were put together by Sse-ma-thsian, whose work was named the *Sse-ki*, or Historical Memoirs. This is composed of 120 books, and embraces the history of China from the reign of Hoang-ti, B.C. 2097, to that of Hiao-wou, A.D. 122, which has been the model of all succeeding writers. It is divided into five parts, entitled the Imperial Chronicle, Chronological Tables, the Eight Branches of Science, Genealogical Histories, and Biography.

Sse-ma Ching is the next historian, also called Siao Sse-ma. He lived towards the end of the 6th century. His book is called *San-hoang-pen-ki*, and is half mythological.

Sse-ma Kouang flourished in the 11th century. His great chronicle is the *Tseu-tehi-thoung-kian*, or Mirror for the use of Governors, and consists of 294 books of text, 30 of tables, and 30 dissertations and discussions, and embraces a period of 1362 years. He had several turns of prosperity and adversity whilst alive, and after his death his tomb was thrown down; but in A.D. 1267 his honours were restored, and his name inscribed in the temple of Confucius.

Jin Kin, or *Classes of Men*, is a Chinese book of great authority. In it the sages occupy the first chapter, and in this Confucius is placed high above all others.

Li is a Chinese word of very extensive meaning, sometimes rendered reason, courtesy, propriety, good breeding. The saying is, *Li and Wen* (learning) make up the whole sum of human excellences.

Four other classics, known as the Four Books, are mostly Confucian. They are the *Ta-heo*, or Great Study, the *Chung-yung*, or Invariable Mean, the *Lun-yu*, or Miscellaneous Conversations, ethical and philosophical works, which are allied with those of *Mang-tze*.

Kang-he-tsze-tien is a great dictionary, and *Pei-wan-yun-fu*, or *Girdle of Literature*, is another. It was published A.D. 1711, in 110 thick volumes.

The *Hae-kwo-tu-che*, A.D. 1840, by Lin, is a historical work.

Their most celebrated poets are *Su-lung-po* of the 8th, and *Le-tae-pih* of the 14th centuries.

Choo-foo-tsze lived about the 12th century, till lately he was looked upon almost as a second Confucius. He has left a very enduring impression upon the literature of the country.

In no other country has the Government ever made so ample a collection of popular songs as that which the Chinese authorities compiled in ancient times, in order that the character of the rule exercised in different principalities might be judged by the tone of the poetical and musical productions of their subject,—a collection from which it is believed that Confucius compiled his celebrated *She-King*, or *Book of Poetry*. Nowhere else has so vast a work ever been produced as the *Encyclopædia*, in 5020 volumes, which was compiled at the command of the enlightened emperor *Kang-he*, and which contains articles on every known subject, and extracts from all works of authority dating from the 12th century B.C. The copy in the British Museum is almost the only complete copy existing.

The Chinese written language consists of picture words. The alphabet is a hieroglyphic system, each word having its own graphic representative. Chinese is monosyllabic; no word is allowed more than one consonant and one vowel. Hence the possible number of words is extremely small; but each word can be pronounced with various accents and intonations, of which there are said to be 450, and the number of words or ideas in Chinese is said to be 43,496. The vastness of this amount will be appreciable, by mentioning that only about 5000 words occur in the *Christian Old and New Testaments*. A student of average memory should be able in five years' study to store up enough to carry him through any ordinary business or official documents. *M. Remusat*, in his *Grammaire Chinoise*, notices three styles of the Chinese written language, which he calls style antique, style litteraire, and langue des magistrats, or langue mandrinique. *Mr. Meadows* considers (*Des. Notes*, p. 13) *Remusat* not quite correct in these definitions. Nevertheless *M. Huc* also says that the Chinese in their written language have three distinctions of style,—the antique or sublime style, the type of which is to be found in the ancient literary monuments, and which exhibits very rare grammatical forms; the vulgar style; and the academic style, which partakes of the two preceding, being less concise than the antique, and less prolix than the vulgar. The vulgar style is employed for light productions, theatrical pieces, private letters, and proclamations intended to be read aloud. The spoken language is composed of 450 monosyllabic intonations, which, by the very subtle variations of the accents, are multiplied to about sixteen hundred. It results from this, that all Chinese words are necessarily grouped in homophonous series, whence a great number of double meanings may arise either in reading or speaking; but their difficulty is avoided by coupling synonymous or antithetic words. In this manner the ambiguities disappear, and the conversation is no longer embarrassed. The language

called *Houan-hoa*, that is to say, common universal language, Europeans wrongfully designate mandarin language, as if it were exclusively reserved for the mandarins or functionaries of government. The *Houan-hoa* is the language spoken by all instructed persons throughout the eighteen provinces of the empire, but in this a distinction is made between the language of the north and that of the south. The former is that of *Pekin*; it is marked by a more frequent and sensible use of the guttural or aspirate accent. It is spoken in all the provincial government offices.

The Chinese have six styles or modes of writing their characters, the most elegant being the *Kiai-shoo*.

The *Chuen-shoo* style is the ancient mode of writing, and is derived immediately from hieroglyphics, and is either a caricature or a stiff and imperfectly written character.

The *Le-shoo* is used by official attendants, and is written with greater freedom than that employed in books.

The *Hing-shoo* is the regular running hand used when quick writing is needed.

The *Tanou-tsze* is a hasty and abbreviate style, used in ordinary transactions and correspondence.

The *Sung-ti* is the regular form of the character used in printing.

The respect which the Chinese pay to their written character amounts almost to worship. The literati employ men to traverse the streets of towns and villages to collect waste-paper from dwelling-houses and shops, lest fragments bearing Chinese characters should be trodden under foot. Each man is provided with two baskets, and at his call, '*Sow-suee-chu!*' Spare the printed paper! the people rush to the door and empty their waste-paper baskets into his. When his baskets are full, he takes them to the temple or guild, provided with a furnace for the purpose of consuming such collections, and in many instances the ashes of this paper are put into earthenware vases, and flung into a tidal stream to be borne out to sea.

The essays of candidates for the various degrees must be in the best calligraphy, and the *Kiai-shoo* style is that adopted by them. They must have at least 360 characters in their essays, and not more than 720.

Chinese Currency.—*Sycee* silver, in Chinese *Wan yin*, is their only approach to a silver currency. In it the government taxes and duties, and the salaries of officers, are paid; and it is also current among merchants in general. The term *Sycee* is derived from two Chinese words, *Se-sze*, fine floss silk; which expression is synonymous with the signification of the term *Van*. This silver is formed into ingots (by the Chinese called shoes), and by the natives of India, *khuri*, or hoofs, which are stamped with the mark of the office that issues them, and the date of their issue. The ingots are of various weights, but most commonly of ten taels each.

Sycee silver is divided into several classes, according to its fineness and freedom from alloy. The only coined money in China are the brass pieces with a hole in the centre. Silver is sold by the weight, and an ounce is the equivalent of from 1700 to 1800 of these brass coins, which are called '*sapek*' by Europeans. They have some pieces of brass, called *tsian*, and in Mongol *tehos*,

of which the inhabitants of Siberia make *tchok* and *tchek*; they are of less value than a *sapee*. A kind of notes are in circulation among private persons.

Weights.—The Chinese have communicated their weights to all the adjacent countries. A *pikul* is equal to 133½ lbs. *avoirdupois*; and 4 lbs. being equal to 3 *catties*, 100 *catties* make a *pikul*.

10 <i>cash</i> = 1 <i>candarin</i> .	16 <i>tael</i> = 1 <i>catty</i> .
10 <i>candarin</i> = 1 <i>mace</i> .	100 <i>catty</i> = 1 <i>pikul</i> .
10 <i>mace</i> = 1 <i>tael</i> .	

Calendar.—The Han dynasty of China reformed the calendar. The Chinese, like all the natives of the north-east of Asia, reckon their time by cycles of 60 years, and give a different name to each year of the cycle. The Chinese cycle of sixty years is called *Hwa-kea-tsze*. The year commences from the conjunction of the sun and moon, or from the nearest new moon, to the fifteenth degree of *Aquarius*. It has twelve lunar months, some of twenty-nine, some of thirty days. To adjust the lunations with the course of the sun, they insert, when necessary, an intercalary month. Day and night are divided into twelve periods, each of two hours. Their division of the day is therefore as simple as the British, and not much unlike it. The Chinese begin the day an hour before midnight, and divide the twenty-four hours into twelve parts of two hours each. Instead of numbering their hours, they give a different name to each period of two hours.

<i>Taze</i> , 11 to 1 morning.	<i>Woo</i> , 11 to 1 afternoon.
<i>Chow</i> , 1 to 3 "	<i>We</i> , 1 to 3 "
<i>Yiu</i> , 3 to 5 "	<i>Shin</i> , 3 to 5 "
<i>Maou</i> , 5 to 7 "	<i>Yew</i> , 5 to 7 "
<i>Shin</i> , 7 to 9 "	<i>Sec</i> , 7 to 9 "
<i>Sze</i> , 9 to 11 "	<i>Hac</i> , 9 to 11 "

The word *Keaou* is added when the hour of each period is intended, and *Ching* for the last. Thus *Keaou taze* is eleven at night, and *Ching taze*, twelve at night; *Keaou chow*, one in the morning; *Ching chow*, two; etc. etc. The word *K'hih*, 'quarter,' is used after the hour with the numerals *yih* (one), *urh* (two), or *sau* (three), to subdivide the hours into quarters, which is the smallest division commonly employed: example, *Ching maou yih k'hih*, a quarter past six; *Keaou woo urh k'hih*, half-past eleven.

This division still maintains itself in legal and official language, though the practical value of the European clocks and watches, now largely used in China, is gradually substituting for it the occidental division of twice twelve hours.

Industry and Art.—The Chinese are a laborious, diligent, hearty-working and painstaking race, skilful in economizing materials, and possessed of no near share of inventive power. Foreign nations have borrowed from China many of the comforts and ornaments of life. The very names of such aids to existence as silk, satin, and tea are in most European lands a sufficient proof of this fact, being but slight modifications of the Chinese words *sze*, *sze-tun*, and *té*. Their knowledge of the magnet is supposed to have led them to a knowledge of the compass. Their ordinary ink, composed of lamp-black and glue, is sufficiently pure to be used in the arts. Their ordinary cotton-cleaning machine, for freeing the cotton fibre from the seeds, has not yet been equalled by all the mechanical skill of Europe. In all working in metals,—in ordinary blacksmith work, metal

smelting, alloys, particularly their white metal of copper, zinc, iron, silver, and nickel, their sonorous gongs and bells, that of *Pekin* being 14½ feet to 13 feet, and their ingenious metallic mirrors, some with engravings; their manufactures of porcelain, glass, and glazes; their carving and engraving of gems, agates, and rock crystal, and on ivory and wood, have for centuries been famed, and much of it excites the admiration of Europe, as also does their varnish work. Their lacquerware is beautiful, though perhaps excelled by that of Japan; their excellent metallic colours, red, white, green, and violet, are used in painting their china-ware. Their porcelain long excelled that of all other countries. The gold and silver tinsel cloths of *Pekin* stand deservedly in high estimation; and their gold and silver filagree work equals any ever produced by ancient Venetian masters; and their chasing in silver and enamelling on silver is unrivalled (see *Carving, Lacquer-ware, Colours, Ceramic Manufacture, Enamelling, Filagree Work*). In weaving they are superior, in candle-making not inferior, but in painting and sculpture they do not excel. They are bold, self-reliant, skilful gardeners, and excellent farmers, and date their skill in these back four thousand years.

Husbandry and silk-weaving were the earliest of the arts cultivated by this people. The former was introduced by *Shin-nong*, the immediate successor of *Fo-hi*, and silk-weaving by an empress; and to both of these inventors the Chinese perform annual sacrifices on their festival days. Husbandry is still highly honoured; and annually, at a grand festival in honour of the spring, the emperor ploughs and sows a field. The Egyptians, Persians, and Greeks held games and festivals, mingled with religious ceremonies, at seed-sowing; and in England, formerly, the festival of Plough Monday was held, during which the plough light was set up before the image of the patron saint of the village. The Chinese, in the reign of *Huang Ti*, invented the magnetic needle, the smelting of copper for making money, and vases of high art; and money seems to have been coined in gold and silver and lead so early as *Confucius'* time, but many payments are still made in kind or by pieces of silver. Most of their calculations are made by a reckoning board. Sir John Davis is of opinion that the art of printing, the composition of gunpowder, and the magnetic compass, which are justly considered in Europe as three of the most important inventions or discoveries of modern times, had their first origin in China. In the beginning of the 10th century printing was invented, and in A.D. 932 that mode of multiplying copies of books received the imperial sanction; a printed imperial edition of all the sacred works having been then published. The greatest of all the arts was not invented in Europe till 500 years after this. *Marco Polo* speaks much of the stamped paper money of the Chinese; and he must have seen their printed books. Their printing types are made from the pear-tree wood, called by them *Ly-mo*.

Eighteen centuries ago they had discovered the secret and means of manufacturing paper. Before that invention, they used to inscribe written characters on strips of bamboo or sheets of metal, using a style, or iron pen, for the purpose of marking the characters. Before the art of paper-

making had arrived at perfection, the Chinese had adopted the practice of writing upon white silk, or cotton, with a bamboo pen; this was found a more convenient method than writing either on strips of bamboo or sheets of metal, as the silk or linen could be folded into a small compass. Paper is manufactured from various materials, each province or district having its own peculiar manufacture. In Foh-kien province it is made from young, soft bamboo; in the province of Chekiang it is made from paddy straw; in the province of Kiang-nan it is made from the refuse silk, and this paper is very fine and delicate, being highly valued for writing complimentary inscriptions upon. To size the paper and render it fit for ink, they make a glue, somewhat similar to isinglass, from fish-bones; these they chop up very small, and soak the mass in water, which is continually renewed. When all oily impurity is extracted, they add a due proportion of alum which has been dissolved. Over the vessel in which this mixture is, a rod is laid; a cleft stick is used for holding the sheet of paper during the process of dipping. As soon as the paper has been sufficiently saturated, it is withdrawn by gently rolling it round the stick which has been laid over the vessel; the sheet of paper is afterwards hung to dry either near a furnace or in the sun. Towards the close of the 19th century, they have thought of introducing railways, have worked their coal mines on the system followed in Europe; have formed steam-mills for spinning and weaving cotton and wool, and have established steam navigation companies and steam war-ships.

The trade of India with China ranks next after that with the United Kingdom; in the year 1878 the total value of the foreign trade of China was as follows:—Imports, 70,804,027 Haikwan taels, or, at 5s. 11½d., £21,093,670; exports, 67,172,179 taels, or £20,011,711; total, 137,976,206 taels, or £41,105,000. The customs revenue in 1878 increased to 12,483,988 taels. The total value of the trade of China with Great Britain and her possessions is set down at 64,943,997 taels or £19,347,899 imports, and 46,022,719 taels or £13,710,935 exports; making together 110,966,716 taels or £33,058,834.

Domestic and Social Relations.—Polygamy exists, and any man may have his second, third, or inferior wives. Women, even as first wives, do not take a favourable position in their households, though as mothers their condition is improved. Chinese differs from Mahomedan polygamy in this, that a Mahomedan woman can legally hold property, is the owner of her own dower, and each wife has a separate establishment and a separate allowance for herself. In China, the extent to which wives are, by law and custom, in the power of their husbands, would produce deplorable effects, but for the almost unlimited power which law and opinion give mothers over their sons of every rank and age. So also the institution of polygamy is largely counterbalanced by the desire of all the men to marry early, in order to secure a progeny of sons as soon as possible. Polygamy is encouraged by the law which compels gentlemen and tradesmen to give their slaves in marriage, and by the physiological views which compel a husband to abstain from cohabiting with his wife during pregnancy, and during all the time the child is at the breast. Wealthy

Chinese are generally very careful to follow this custom. The dread of unhappiness caused by polygamy has kept many Chinese girls from marrying, and instances occur of suicide to avoid it. The imperial household is probably unsurpassed in extent, there being married to the emperor, not only the chief wife, who is the empress, but also under-wives of first, second, and third classes, on all of whom unnumbered servants wait. The imperial porcelain factories of Kin-tih-chin forwarded to the palace for their use, in the year 1877, 11,838 articles, consisting of fish-bowls, flower-vases, and ornamental jars of the first quality, and inferior products in proportion.

In China, children are married according to seniority, as in Genesis xxix. 26, and Book of Tobit viii. 1. In China, parents choose wives for their sons, as was customary with the early Hebrews, as in Genesis xxi. 21, xxxviii. 6, Deut. xxii. 16, and as still prevails with most of the Eastern races. A Chinaman cannot take as a wife a woman who bears the same family or clan name as himself; such a marriage is null. Neither can he marry his cousin on his mother's side, nor his step-daughter, nor his aunt, the sister of his mother. No lady can marry until she is fourteen years of age. *Nap-pie* is the presentation of silks in betrothal, as in Genesis xxiv. 22. The bride is seldom seen by the husband, until she leave the sedan chair in which she is conveyed, with her belongings, to his house. Mandarin ducks are introduced at marriages as patterns of conjugal felicity. The last part of the ceremonial is for a female attendant to present to the bridegroom a small linen sheet, which he spreads on the nuptial couch, and on the following morning it is presented to his parents. In China, widow re-marriage is not respectable, and a girl whose betrothed dies is regarded as a widow.

Cosmetics are much used by Chinese ladies; they are forbidden to be used by a bride on her marriage day, and are not used in mourning.

Playactors, policemen, boatmen, and slaves must marry into their own respective classes.

As in Matthew's Gospel, xxv., lanterns are much used.

In the little feet of the Chinese women, the four smaller toes appear grown into the foot, the great toe being left in its natural position. The fore part of the foot is so tightly bound with strong broad ligatures, that all the growth is forced into height instead of length and breadth, and forms a thick lump at the ankle; the under part measures scarcely four inches long and an inch and a half wide. The foot is constantly bound up in white linen or silk, and strong broad ribbons, and stuck in a very high-heeled shoe. The crippled fair ones trip about with tolerable quickness; to be sure, they waddle like geese, but they manage to get up and down stairs without the help of a stick. The feet of their women are naturally small, but at six or nine years of age they are trained into a deformity. Long bandages of cotton cloth an inch wide are folded round the foot, and brought in a figure of eight form from the heel across the instep and over the toes, then carried under the foot and round the heel, and so on, and drawn as tight as possible. After some years, if the bandage has been well applied, the pain subsides. The tarsus is bent on itself; the back of the os calcis is brought to the ground. A large foot is a sure

indication of humble birth. It is not, however, the mark of aristocratic or wealthy station, but a Chinese as opposed to a Tartar practice, though indeed some Chinese races do not follow it. Infanticide, of which the husbands are the only perpetrators, is not uncommon; but female children only are murdered, and those immediately after their birth. This horrible crime meets with no punishment from the laws of the country; a father being the sovereign lord of his children, he may extinguish life whenever he perceives, or pretends, that a prolongation of it would only aggravate the sufferings of his offspring. Professor Douglas is of opinion that it is only abject poverty which drives Chinese parents to the rough resource of infanticide, and that in prosperous districts such primitive method of providing for children is unknown. But the stone which stands near a pool outside the city of Fu-chu, bearing the inscription, 'Girls may not be drowned here,' proves that the inestimable blessing of possessing daughters is not yet appreciated as it should be by Chinese parents.

The Chinese are not a moral, though they are a ceremonial people. Their usual salutation when meeting is *Hau-tsing-tsing*? Are you well? Hail! Hail! Social conversation is replete with compliments, compelling even the most egotistic talker always to speak of himself as 'the little one,' 'the mean one,' 'the stupid one,' or 'the cheap one;' and allowing such a greeting as 'I congratulate you on having acquired wealth,' to be addressed to a passing beggar. They, like most of the natives of the East, waste much time before commencing the business for which they meet. The conversation must always begin on indifferent and mostly insignificant subjects, and at the end of the visit you explain in three words what really brings you there. The visitor rises, and says, 'I have been troublesome to you a very long time;' and doubtless, of all Chinese compliments, this is the one that most frequently approaches the truth. They are not truthful. Sir John Bowring says (i. p. 105) his experience in China predisposes him to receive with doubt and distrust any statement of a nature when any, the smallest, interest would be possibly promoted by falsehood. They are largely given to the use of opium. Mr. Knowlton estimated that there are 2,351,115 confirmed opium-smokers, or one in every 170 of the population.

In ordinary quiet times they appear to maintain order as if by common consent, independent of all surveillance or interference on the part of the executive. But let them be brought into contact with bloodshed and rapine, or let them be roused by oppression or fanaticism, and all that is evil in their dispositions will at once assert itself, inciting them to the most fiendish and atrocious acts of which human nature has been found capable. Both kindness and cruelty, gentleness and ferocity, have each its place in the Chinese character; and the sway which either emotion has upon their minds, depends very much upon the associations by which they are for the moment surrounded. When in their own quiet homes, pursuing undisturbed the avocations to which they have been accustomed, there are no more harmless, well-intentioned, and orderly people.

They are good agriculturists, mechanics, labourers, and sailors; and they possess all the

intelligence, delicacy of touch, and unwearying patience which are necessary to render them first-rate machinists and manufacturers. They are, moreover, docile, sober, thrifty, industrious, self-denying, enduring, and peace-loving to a degree.

They emigrate to any climate, be it hot or frigid. All that is needed is teaching and guiding, combined with capital and enterprise, to convert them into the most efficient workmen to be found on the face of the earth.

On the pressure of want they readily part with their children, especially girls, and girls are often destroyed. On the other hand, asylums exist in China for aged men and women, for the blind, and for lepers. The aged men are treated with great respect, and are allowed to have walking-sticks, which are not used by Chinese, long-stemmed pipes being employed. Monumental arches are raised to their honour.

Food.—The great staff of life in China is rice, which is either eaten dry, or mixed with water so as to resemble a soup. Out of rice they make their chief intoxicating liquor, which, when good, is something like strong whisky, both in its colourless appearance and its smoky flavour. Several vegetables are consumed, such as the sweet potato, Barbadoes millet, peas, beans, turnips, carrots, etc. Of their fruits, the orange, lichee, loquat, and mangoes are much in use. Their favourite animal food is pork, the taste for which is national. There is a maxim prevalent among them, that a scholar does not quit his books nor a poor man his pigs. The flesh of the bullock, sheep, deer, dog, cat, wild cat, rat, and horse is eaten, but compared with that of swine these are rarities. Fish are eaten in great abundance, either fresh, dried, or salted; and they rear great quantities of ducks and various species of fowl for the table. The comprehensive principle on which Chinese diet is regulated, is to eat everything which can possibly give nourishment. Their notions as to dogs' and rats' flesh are quite fanciful. The luxuries consumed by the rich consist of the edible bird's nest, the beche de mer or sea-slug, shark fins, fish maws, cow sinews, points of stag antlers, buffalo hides, which afford the gelatinous food considered so restorative. Amongst their delicacies also are dishes made of the larvæ of the sphinx moth, and of a grub bred in the sugar-cane. In China, the various modes of catching and rearing fish exhibit the contrivance and skill of the Chinese quite as much as their agricultural operations. According to the Repository, at least one-tenth of the population derive their food from the water, and necessity leads them to invent and try many ingenious ways of securing the finny tribes. Besides fish, molluscs of every kind, crustacea of all kinds. A Chinese is prohibited by law from killing a cow. The punishment for slaughtering a draught cow or ox, for the first offence, is one hundred blows; for a second offence, the same number, and exile for life from the province.

The amusements of the Chinese comprise theatrical representations, pyrotechnic displays, marionettes, peep-shows, conjurers, athletes, ventriloquists, regattas, cricket fighting, quail fighting; and they are very fond of singing-birds.

The horse commonly seen in China is a mere pony, not much larger than the Shetland pony; it is bony and strong, but kept with little care.

and presents a worse appearance than it would if its hair were trimmed, its fetlocks shorn, and its tail untied. This custom of knotting the tail is an ancient practice, and the sculptures at Persepolis show that the same fashion prevailed among the Persians. The Chinese language possesses a great variety of terms to designate the horse; the difference of age, sex, colour, and disposition are all denoted by particular characters.

Flora.—The only trees to the cultivation of which the Chinese pay any attention, are the fruit-bearing kinds; and in some places in China there are very fair orchards, containing the mango, leeches, longan, wangpee, orange, citrons, and pumelows. The yang-mai is a scarlet fruit, not unlike an arbutus or strawberry, but having a stone like a plum in the centre. The kum-quat is a small species of citrus, about the size of an oval gooseberry, with a sweet rind and sharp acid pulp. A small quantity is sent to England preserved in sugar. Groves of the kum-quat bush are common on all the hill-sides of Chusan from three to six feet high, and when covered with its orange-coloured fruit is a very pretty object. The shaddock, plantain, and persimmon are common, and several varieties are enumerated of each; the plantain is eaten raw and cooked, and forms no inconsiderable item in the subsistence of the poor. The pomegranate, carambola or tree gooseberry, mango, custard-apple, pine-apple, rose-apple, bread-fruit, fig, guava, and olive, some of them as good and others inferior to what are found in other countries, increase the list. The whampe, leeches, longan or dragon's eyes, and loquat, are indigenous fruits at Canton. The first resembles a grape in size, and a gooseberry in taste; the loquat (*Eriobotrya*) is a kind of medlar. The leeches looks like a strawberry in size and shape; the tough, rough red skin encloses a sweet watery pulp of a whitish colour, surrounding a hard seed. Grapes are plenty, and tolerably good.

In China, the staple summer crops are those which yield textile fibres. The jute of India, a species of *Corchorus*, is grown to a very large extent, and in China is used in the manufacture of sacks and bags for holding rice and other grains. A gigantic species of hemp (*Cannabis*) growing from 10 to 15 feet in height, is also a staple summer crop of China, and is used in making ropes and strings of various sizes, such articles being in great demand for tracking the boats up rivers and in the canals of the country. China grass-cloth, a beautiful fabric made in the Canton province, is largely exported to Europe and America. The *Urtica nivea* plant, which is supposed to produce this, is also abundantly grown in Kiang-si and other provinces. Fabrics of various degrees of fineness are made from this fibre, but none are so fine as that made about Canton; it is also spun into a very strong and durable thread. There are two very distinct varieties of this plant common in Che-kiang,—one the cultivated, the other the wild. The cultivated variety has larger leaves than the other; on the upper side they are of lighter green, and on the under they are much more downy. The stems also are lighter in colour; and the whole plant has a silky feel about it, which the wild one wants. The wild variety grows plentifully on sloping banks, on city walls, and other old and ruinous buildings. It is not prized by the natives, who say its fibre is not so fine, and

more broken and confused in its structure than the other kind. The cultivated kind yields three crops a year. A species of juncus is grown, the stems of which are woven into beautiful mats, used by the natives for sleeping upon, for covering the floors of rooms, and for many other useful purposes. This is cultivated in water somewhat like the rice plant, and is therefore always planted in the lowest part of these valleys. In the beginning of July, harvest of this crop commences.

Burials.—When the life has departed, the dead body is arrayed in robes of state, or in most costly apparel; ablutions are not performed, nor any unnecessary handling of the body suffered. White is the sign of mourning. The Chinese worship the spirits of the dead; and amongst that nation the desire to have a good coffin is universal. Many purchase for themselves that last tenement, and keep it by them, and it is usually substantial, of metal or wood. In Burma, where many Chinese are settled, the best block of teak is selected, and, the upper portion being sawn off to form a lid, the block is hollowed and ornamented. These may be seen in Moulmein in every carpenter's shop. In China, the coffin-makers' shops have a very gay instead of a lugubrious appearance, as the coffins are usually painted red, or some equally bright colour, and the more expensive ones are decorated profusely with gilding; these coffins are placed on shelves one above the other, and the prices vary from one dollar up to four or five hundred. They are often presented by children to parents. The funeral customs of China vary in the different districts. In Foh-kien, the body is placed in a coffin soon after death; a fan is placed in the hand, a piece of silver in the mouth, and a hole is sometimes made in the roof for the spirit to effect its exit. The tombs are on the hill-sides, where lucky spots are chosen by geomancers. Paper images of clothes, horses, and other luxuries are cast into the grave, and a sacrifice of cooked provisions is offered on the day of the funeral. Every year, in the month of April, the whole population visit the tombs and worship the manes of ancestors. Sometimes a poor family will keep the coffin for many months in their house till able to purchase a tomb, but the very poor are buried *en masse* within enclosed buildings. The dead are occasionally left exposed on the sides of hills, at the wayside, and on banks of rivers, creeks, and canals. At Nankin they are exposed in great numbers. The rite of respectful burial is, however, so revered, that burial clubs exist in all the large cities. The monumental tombs are small raised truncated cylinders. In mourning for near relations, every part of the ceremonial is exactly regulated,—even the period, manner, and degree of the mourner's grief being duly prescribed. The corpse, being dressed in warm clothes, is deposited in a substantial coffin, and kept for several days above ground, whilst the survivors express their measured grief by gesture, dishevelled hair, sackcloth, and mournful silence. When a good spot has been selected for the grave, the corpse is consigned to the earth. Building a tomb in the form of a horse-shoe, they inscribe thereon the name of the deceased, erect a tablet to his memory in the hall of his ancestors, and repair annually to the grave, in order to prostrate themselves before the manes, and to offer victuals in sacrifice to the spirits. In the temples,

divine honours are paid to their memory. To supply their full wants in the other world, they burn gilt paper, paper chariots, and houses, with every necessary article of furniture, which are supposed to be changed in the other world into real utensils; whilst the gilt paper, when burnt to ashes, becomes so much ready money. The greater the personage, the more protracted is the mourning. The emperor mourns three years for his parent, and every good subject follows his august example. Mandarins resign their office during this period of affliction; literati avoid entering the examinations; the common people abstain for some time from their labour. Sati prevailed to a considerable extent until about the 18th century. It does not appear, however, to have been regarded as a compulsory rite, but was generally the widow's own choice, to show her extreme fidelity, or to escape the hardships of widowhood, or, in the case of dutiful sons, to save the life of a parent. Fire was never used; but opium, poison, or starvation was the means of suicide employed. Yün Chang was the first emperor who discountenanced those practices, which his immediate predecessors had encouraged; and he forbade honorary tablets to be erected to self-immolating victims. In 1792, a memorial was presented to the emperor, praying for the dedication of a tablet to a most dutiful son, who had cut out his liver in order to cure his mother's sickness. The imperial Board of Rites, after mature deliberation, respectfully observed that the practice of cutting out the liver is that of the ignorant, showing a contempt for their lives, and after all but foolish devotion; and a decree was issued discountenancing the custom.—*Williams' Middle Kingdom; Fortune's Wanderings; Maury's Physical Geography; Thunberg's Travels; Rev. Frederic W. Farrar; Mr. Morrison; Edinburgh Review, 1867; Gutzlaff, Chinese History; Forbes, Five Years in China; Meadows' People of China; ib., The Chinese and their Rebellions; Sirr, China and the Chinese; Huc, Chinese Empire; ib., Journey through Tartary, Tibet, and China; ib., Christianity; Wade's Chinese Army; Duhalde, History of China; Bunsen's God in History; Journal, Indian Archipelago, 1848; Prinsep's Tibet; Timkovski; Simmet; Sir John Davis' Chinese; Dr. W. W. Hunter; Marco Polo; Bowering's Siam; Yule's Cathay; Edkins' Religion in China; Foreigner in Far Cathay; Frere's Antipodes; Gray's China; Dr. A. Gordon's Chinese, 1860-61; Oriental Herald; Oriental Linguistic Studies; Tod's Rajasthan; D. C. Boulger's China; Lockhart's Medical Missionary; R. K. Douglas' China; H. A. Giles' China.*

CHINA. MAHI. *Eriobotrya Japonica*, Lindl.

CHINA AVAGUDA. TEL. *Trichosanthes incisa*. China Dula Gondi, *Tragia cannabina*.

CHINA BARK, bark of *Buena hexandra*. It is a febrifuge, but is less powerful than the cinchona barks.

CHINA GRASS, or China Flax.

Boehmeria nivea, Gaud.
Urtica nivea, Linn.

Rheea, . . . ASSAM.
Inan Bonon, . . .
Gambe, . . . EAST CELEBES.
Chu-ma, Chu, . . . CHIN.
Karao, Tajo, Mao, . . . JAP.
Rami, . . . BENG., MALAY.

Urtica tenacissima, Roxb.

Tali rami, BENG., MALAY.
Lepceah, . . . NEPAL.
Kankura, . . . RUNGPORE.
Pan, . . . SHAN.
Kaloi, Kalovee, SUMATRA.

This nettle grows in all the moist countries

from Bengal, through Rungpore, Assam, into China, and southward all through the Malay Peninsula into Sumatra, Java, and Celebes. In Bengal and Assam its fibre has only been used for string and ropes by the fishermen and by the Dom race of Assam; but in China, where it has long been woven into the China grass cloth, it is carefully cultivated, and great care is also taken in the process of cutting down, scraping, peeling, steeping, and bleaching the fibre. These, indeed, are detailed minutely in the Imperial Treatise of Chinese Agriculture, lib. lxxviii. fol. 3. When grown from seed, a sandy soil is preferred; the ground is repeatedly dug, formed into beds a foot broad and four feet long, raked and smoothed and watered, again raked and again smoothed, and a pint of seed, mixed with four pints of earth, is scattered on the surface of six or seven beds, and left uncovered in. They are sheltered from the sun by a canopy of matting or grass, which is kept damp, and this shelter is retained till the plants be an inch or two high. The young plants are then to be transferred into a stiffer soil, which is afterwards repeatedly hoed, and top-dressings of fresh horse dung, ass, or cow dung can be used. This process is adopted only where the roots of old plants are not obtainable. The plant grows best from shoots or layers. Dr. Royle (Fib. Pl. p. 344) gives the following as the Indo-Chinese method for preparing the rheea fibre, as adopted in Upper Assam by Major Hannay:—

To cut the Rheea.—The rheea is fit for cutting when the stems become of a brown colour for about six inches upwards from the root. Hold the top of the stalk in the left hand, and with the right hand strip off the leaves by passing it quickly down to the root, and cut off with a sharp knife, taking care to be above the hairy networks of the roots, as these should be covered up with manure immediately, to ensure another crop quickly; lop off the tender top to the stalk, and make the reeds up into bundles of 200 or 250 if the stripping process is not to be carried on in the field or garden; but it is best to strip off the bark and fibre on the spot, as the burnt ashes of the stem afford a good dressing for the roots, along with dry cow-dung.

To strip off the Bark and Fibre.—The operator holds the stalk in both hands nearly in the middle, and, pressing the forefinger and thumb of both hands firmly, gives it a peculiar twist, by which the inner pith is broken through, and then, passing the fingers of his right and left hand rapidly alternately towards each end, the bark and fibre is completely separated from the stalk in two strands.

Making up into Bundles.—The strands of bark and fibre are now made up into bundles of convenient size, tied at the smaller end with a shred of fibre, and put into clean water for a few hours, which, he thinks, deprives the plant of its tannin or colouring matter, the water becoming quite red in a short time.

Cleaning Process is as follows:—The bundles are put on a hook fastened in a post by means of the tie at the smaller end, at a convenient height for the operator, who takes each strand separately of the larger end in his left hand, passes the thumb of his right hand quickly along the inner side, by which operation the outer bark is completely separated from the fibre, and the riband

of fibre is then thoroughly cleaned by two or three scrapings with a small knife. This completes the operation,—with some loss, however, say one-fifth,—and if quickly dried in the sun, it might at once be made up for exportation. But the appearance of the fibre is much improved by exposure (immediately after cleaning) on the grass to a night's heavy dew in September or October, or a shower of rain during the rainy season. After drying, the colour improves, and there is no risk from mildew on the voyage homewards (Royle, *Fib. Pl.* p. 344). The French have been growing China grass in small quantities ever since 1844, in which year a packet of China grass seed was sent home by M. Leclancher, surgeon to the war corvette *La Favorite*. The Rouen Chamber of Commerce reported that China grass fibre has an affinity for colouring matters at least equal, if not superior, to that of the very finest kinds of cotton. The plant will flourish north of Paris, and even in Belgium. Mr. Gray's process was said to produce China grass fibres almost as strong as so much silk, quite as free and unentangled as the fibres of the most perfect samples of cotton-wool, and capable of being spun into as delicate a yarn as ever was produced from the very best Sea Island cotton. It possesses a lustre far exceeding that of cotton, greatly in excess of that of native Indian grass cloth. His process was said to be practicable on any scale, and also to jute, hemp, New Zealand flax, and various other plants. Lord Mayo directed much attention to this fibre, which is said to bring prices of £60 to £120 a ton. But such prices could only be obtainable for well-prepared fibre of the finest quality. It is said to be procurable at Ningpo at £20 the ton.—*Roxb. iii.* 590; *Royle, Fib. Pl.*

CHINAKA. HIND. *Brassica Griffithii*; *Malcolmia strigosa*.

CHINAKARAM. SINGH. Alum.

CHINA KARINGUVA. TEL. *Gardenia lucida*.

CHINAL, a caste of people in the Derajat who make carpets; in India, a common woman.

CHINANGI. TEL. *Lagerstroemia parviflora*.

CHINAPATAM, in lat. 12° 39' N., and long. 77° 13' E., is a Mysore town S.W. of Birdi or Bidadi, 2011 feet above the sea; also the name given to Madras city by all natives of the Peninsula.

CHINAR. HIND. *Platanus orientalis*.

CHINAR, in lat. 34° 8' N., long. 74° 50' 3" E., an island in the lake near Srinagur, the capital of Kashmir, 5209 feet above the sea.

CHINA REDWOOD, a Penang wood of a red colour, used for furniture.

CHINA ROOT.

Kueb-sinio, . . .	ARAB.	<i>Smilax China</i> , . . .	LAT.
Sook China, . . .	BENG.	<i>Esquina</i> , . . .	PORT.
Tu-fu-ling, . . .	CHIN.	<i>China alla</i> , . . .	SINGH.
China-wortel, . . .	DUT.	<i>Rais China</i> , . . .	SP.
Squine, Esquino, . . .	FR.	<i>Coccolmea</i> , . . .	"
China-wurzel, . . .	GER.	<i>Paringay-putay</i> , . . .	TAM.
Chob-cheeneo, GUJ., HIND.			

This large tuberos knotty root of the *Smilax China* is of a reddish white colour within, and reddish brown without. It grows abundantly in China and Japan. At one time considerably employed in medicine in syphilitic cachexia.

CHINARU. HIND. *Armeniac vulgaris*, *Lam.*

CHINA VALASA. TEL. *Walsura ternata*, *R.*

CHINA-WARE, or porcelain, once so extensively exported from China, is now almost confined to the commonest and cheapest descrip-

tions of stoneware. The patterns made by the Chinese seldom change, while the European manufacturers both consult and lead the taste and fancy of their customers; and it is owing to this, in some degree, that the demand for the Chinese finer ware has ceased, though the Mongols, Siamese, Hindus, and islanders in the Archipelago are still largely supplied from China. When the productions of the East were first carried round by the Cape of Good Hope, the porcelain of China bore an enormous price; and the profits of manufacturing it having been ascertained, the European nations began to make it, and soon outrivalled the Chinese. China-ware is sold in China in sets, consisting of a table set of 270 pieces at from 12 to 75 taels, a breakfast set of 20 pieces at 3 taels, a long tea set of 101 pieces at 11 to 13 taels, and a short tea set of 46 pieces at from 5 to 6 taels.

The Ow-mi-ew, or black China-ware ornamented with gold, is very much prized in China; to make it they mix three ounces of azure and seven of the oil of stones; this is laid on the ware, and when perfectly dry it is baked, after which the gold is laid on and the vessel is re-baked. The To-wi-kie is a porcelain prepared simply by varnishing the vessels with a whitish ash-coloured varnish, made from calcined translucent white pebbles. This has the property of marbling and veining the ware, and giving it an appearance as if it had been fractured into many pieces, which had been carefully reunited. This China-ware is highly prized under the designation of cracked porcelain.—*Compendium by Hon. Mr. Morrison.* See Ceramic Manufactures.

CHIN-CHIN. CHIN. Corruption of Tsing Tsing, a Chinese greeting, meaning, I pray you! I pray you!

CHINCHIKED or Mai-ji, in the taluk of Pachora in the Bombay Presidency, has an annual fair in the 15th of the month Paosh, about the beginning of January. It originated from the circumstance of a female devotee named Mai-ji burying herself alive. She was the daughter of a man of the Firoli Kunbi caste of the village of Hewri, in the Jamner district. Being distressed by her husband's parents, she abandoned her home and studied under Goraksh Nath in the Toran Māl mountain. She finally settled at Chinchked, where she was annually provided with a house, which she every year burned, and at the close of the twelfth year she buried herself alive, about the middle of the 17th century. People made vows to her while alive, and after her death to her manes.

CHINCHONA, a genus of plants, natives of South America, several species of which are of great value in medicine, yielding 'bark' or Peruvian or cinchona bark, from which quinine is produced. See Cinchona.

CHIN-CHOO. CHIN. The true God, of Chinese Mahomedans.

CHINCHOR, a town in the Dekhan, with a temple containing an idol named Kandoba, to whom many Murlī girls are devoted. See Murlī.

CHIN-CHOU. CHIN. *Gracillaria tenax*.

CHIN-DEO, in Canara, means Jain images, and is supposed to be a corruption of Jain deo.

CHINDWARAH, in the Nerbadda division of the Central Provinces, is a district lying between lat. 21° 25' and 22° 50' N., and long. 78° and 79° 30' E., with an area of 3852 square miles. It has

two distinct natural subdivisions,—the hill country above the slopes of the Satpura mountains, called the Balaghat, and a tract of lowland beneath them to the south, and called the Zer Ghat. It is a sanatorium, and there is a barrack for fifty men.

CHINESE FEET. The binding of the feet is not begun till the child has learned to walk and do various things. The bandages are specially manufactured, and are about two inches wide and two yards long for the first year, five yards long for subsequent years. The end of the slip is laid on the inside of the foot at the instep, then carried over the toes, under the foot, and round the heel, the toes being thus drawn towards and over the sole, while a bulge is produced on the instep and a deep indentation in the sole. The indentation, it is considered, should measure about an inch and a half from the part of the foot that rests on the ground up to the instep. Successive layers of bandages are used till the strip is all used, and the end is then sewn tightly down. The foot is so squeezed upward, that in walking only the ball of the great toe touches the ground. Large quantities of powdered alum are used to prevent ulceration and lessen the offensive odour. After a month the foot is put in hot water to soak some time; then the bandage is carefully unwound, much dead cuticle coming off with it. Ulcers and other sores are often formed on the foot; frequently, too, a large piece of flesh sloughs off the sole, and one or two toes may even drop off, in which case the woman feels afterwards repaid by having smaller and more delicate feet. Each time the bandage is taken off the foot is kneaded, to make the joints more flexible, and is then bound up again as quickly as possible with a fresh bandage, which is drawn up more tightly. During the first year the pain is so intense that the sufferer can do nothing; and for about two years the foot aches continually, and is the seat of a pain which is like the pricking of sharp needles. With continued rigorous binding, the foot in two years ceases to ache, and the whole leg, from the knee downward, becomes shrunk, so as to be little more than skin and bone. When once formed, the golden lily, as the Chinese lady calls her delicate little foot, can never recover its original shape.

CHINESE MOSS, *Plocaria tenax*. See Algæ.

CHINESE TARTARY, also called Chinese Turkestan, is a great depressed valley, shut in by mountains of great height on three sides, and on the east are barren sands, which merge imperceptibly into the great desert of Gobi. It comprised two great divisions, viz. Zungar or Mughliolistan, and Kashgar or Eastern Turkestan, on the N. and S. respectively of the intersecting range of the Tian-Shan mountains. The northern portion was called by the Chinese Tian-Shan Peh-Lu, and the southern, Tian-Shan Nan-Lu. The first of these has lapsed in great part to Russia. The Tian-Shan range separates it from Zungaria, the Bolor range from Transoxiana, and the Kara Koram and Kouen Lun from India and Tibet on the south. The land is clayey near the base of the mountains, but sandy in the central tracts. Rain is rare, and the air is of exceeding dryness, but the climate is temperate and healthy. It is well watered from the mountains, the waters converging towards the Ergol or Tarym. The country has gold, copper, salt, sulphur and the jade-stone. The southern line of the caravan

route passes through it from Khamil to Aksu and Kashgar. From Aksu to Khokand is 800 miles. It was subject to China from the beginning of the Christian era, to the time of Chengiz Khan. After the middle of the 18th century, the Chinese power regained possession of it. Alti-Shahr, or the six cities, forms the western district, comprising Yarkand, Kashgar, Khotan, Aksu, Yangbisar, and Oosh-Turfan, with territories subordinate to each. Eastern Turkestan is eminently Mahomedan. Yarkand is the entrepot of trade between China and Bokhara. Khotan, from the time of Ctesias, has been celebrated for its mineral products, its jade and emeralds, its shawl wool, and flax. It was at one time the entrepot of a vast trade with Hindustan, and now imports largely furs, broad-cloth, leather, and sugar. In the latter part of the 19th century, there was a short-lived Mahomedan uprising, from which sprang difficulties between China and Russia, the latter having taken possession of the province of Ili, and the town and district of Kuldja.

CHINGANI, a name of the Kara-chi of Central Asia, supposed to be a gipsy race.

CHINGARI. HIND. A thug; a clan of Muttri thugs assuming to be Mahomedans, and travelling as ostensible grain merchants.—*Wilson*.

CHINGERITT, a Penang wood of a brown colour, sp. gr. 2.165. A small tree, used for furniture.

CHING-HAE or Chin-hae, in lat. 29° 57½' N., long. 121° 43½' E., is the maritime town of the river Yung or Ningpo. The city of Ningpo is about 10 miles from the river's harbour. Ching-hae is a heen or city of the third class. It was captured by the British on 10th October 1841.—*Horsb.*

CHING - HWANG - MEAOU. CHIN. The temple in Chinese towns dedicated to the patron deity of the town. On the morning of the new or full moon, is a lecture, one of sixteen which the emperor Kang ordered to be read, but first put in practice by his son. They are practical homilies on the duties of life.

CHING-KEANG-FO, a town of China, battle of, fought 21st July 1842.

CHINGLEPUT, a town 36 miles S. of Madras. It gives its name to a revenue division which lies between parallels of 12° 13' and 13° 54' N. lat., and wraps round Madras. The several races of Mahomedans number 23,192, and Hindus 899,686, of the Valala, Vania, Kamalar, Kaikalar sections, and a small number of Irular and Pariahs. It is known as the Jaghir, having been, in 1763, granted as a jaghir to the E. I. Co. by the nawab Muhammad Ali, for services rendered to his father Anwar-ud-Din Khan and himself; and in 1765 the grant was confirmed by the emperor of Delhi. It was twice overrun by Hyder Ali, in 1768 and in 1780; and in 1781 many parts presented only the bones of the persons who had been massacred, and the ruins of houses made desolate. It has small rivers.

The Palar, rising in Mysore, passes Arcot, Walajahbad, and Chingleput, and falls into the sea at Sadras. The Cheyar falls into the Palar opposite Walajahbad; the Adyar falls into the sea at Madras; and the Cortelair flows into the marine lagoon at Ennore. There are four large tanks, of Chambrambaukum, Utramalur, Rod Hills, and Karangoli. St. Thomas' Mount, a military cantonment eight miles south of Madras,

is the headquarters of the artillery. It has two hills rising from a level plain. One of these is St. Thomas' Mount, 220 feet high, on which in 1547 the Portuguese had built a church, and another church on the Little Mount, a rocky hill two miles nearer Madras. On the 9th February 1759, a battle was fought on this plain between the British under Captain Calliaud, and the French. It lasted from 5 A.M. to 5 P.M., and the French, under Lally, withdrew. Between 1746 and 1872, 16 disastrous cyclones swept over it.

CHINGO PANMARI, the Tibetan name of Mount Everest.

CHINGORIER, one of the thug clans.

CHINHA. SANSK. A cognisance, an emblem. Each of the Jaina thirthankars and each of the chief Hindu deities has one. The Chinha of the 24 Jaina thirthankars are the antelope, ape, buffalo, boar, bull, cobra, chank shell, crocodile, curlew, elephant, falcon, goat, horse, lion, lotus, moon, Nandyavarta mark, rhinoceros, the Srivatsa mark, the Swastika mark, thunderbolt, tortoise, water jar, and water lily. The apostles of the Christians had emblems similarly.

CHINI, HIND., i.e. China, or relating to China; hence Chini, sugar-candy, first brought from China, but is also white moist sugar. Rewand Chini, HIND., is *Verbascum thapsus*, *Eremostachys vicaryi*, and *Rheum emodi*. Chini-kam is porcelain.

CHINI, in the Western Himalaya, is situated on the northern side of the snowy range. A few marches to the north of Chini, sharp to the left of the road, there is a grand pass from the Sutlej to the Spiti valley, 18,600 feet high, the Mance or Manceerung crest in the month of May resembling a hurricane of snow, beyond everything sublime and cold.

CHINI. PUSIRC. A China silk fabric of Yarkand.

CHIN-INDIA, a name proposed for the countries beyond the Ganges.

CHINIOT, a town in the Jhang district of the Panjab. It has the shrine of Shah Burhan, a Mahomedan saint, revered by Hindus and Mahomedans.—*Imp. Gaz.*

CHINKAH. HIND. A traversing basket-bridge.—*Wilson.*

CHINKARA, HIND., of European and native sportsmen, is the *Gazella Bennettii*, found generally on the plains and low open hills of India. In many parts it especially affects the nullahs and stony eminences which diversify the plain. The horns of the male are annulated, and twist back with a slight but graceful curve. They are ten or twelve inches in length. The doe has horns also, but much smaller in every way than those of the buck. They are not annulated, and are sometimes strangely distorted, without any approach to regularity of appearance. They roam in herds of six or eight, but they are more abundant in the province of Cutch than elsewhere, and the antelope is not seen there, though, across the gulf, on the coast of Kattyawar, they abound.

CHIN KILICH KHAN, of Turk origin, of respectable family, was son of Ghazi-ud-Din, who long served under the emperors Aurangzeb, Jahandar Shah, Bahadur Shah, and Farukhsir. Chin Kilich Khan also served and raised himself to independence in Hyderabad, where he was known under the titles Nizam-ul Mulk and Asaf Jah. He was the founder of the Asaf Jahi

dynasty still ruling there, A.D. 1880, as Nizams of the Dekhan. Chin Kilich, are Turki words meaning a sword-drawer.

CHINNA. TAM., TEL. Small; hence,—

Chinna Aku, *Acalypha betulina*, Retz.

Chinna Avaguda, *Trichosanthes incisa*.

Chinna Botaku, *Cordia angustifolia*.

Chinna Dula-gondi, *Tragia camuabina*.

Chinna Janimi, *Acacia cineraria*, Willd.

Chinna Kala Banda, *Aloe littoralis*, Koenig; A.

Indica, Royle; A. *perfoliata*, Roxb. ii. 167.

Chinna Kalinga, *Dillenia pentagyna*, R. ii. 625.

Chinna Kaliva Pandu, *Carissa spinarum*.

Chinna Mandula Mari, *Vitis Linnæi*, Wall.

Chinna Moralli, *Euchanania latifolia*, R.

Chinna Muttama, *Sida alba*, R.

Chinna Muttavapulagam, *Pavonia Zeylanica*.

Chinna Nangi, *Lagerstromia macrocarpa*, Roxb.;

L. *parviflora*.

Chinna Naringi, *Triphasia trifoliata*.

Chinna Navuli, *Nieburhia linifolia*, R.

Chinna Nare, *Eugenia salicifolia*, R.

Chinna Nidra Kanti, *Desmanthus triquetrus*.

Chinna Puli, larger panther.

Chinna Ranabheri, *Anisomeles Malabarica*.

Chinna Kantu, *Rhaphidospora glabra*, Nees.

CHINNA KIMMEDY, a district in the N.E. part of the Madras Presidency, inhabited by Khand races, who until lately practised human sacrifices, the victims being styled Meriah. The rite is supposed to be now suppressed. In Chinna Kimmedy, 'the Meriah was dragged along the fields, surrounded by a crowd of half-intoxicated Kandhs, who, shouting and screaming, rushed upon him, and with their knives cut the flesh piecemeal from his bones, avoiding the head and bowels, till the victim, dying from loss of blood, was relieved from torture, when the remains were burnt, and the ashes mixed with the new grain to preserve it from insects.' Captain MacVicar, writing in 1851, stated that in Maji Deso, midway between Boad and Patna, 'on the day of sacrifice, after the appointed ceremonies, the Meriah was surrounded by the Kandhs, who beat him violently on the head.'

CHINNAMA. TAM., TEL. Little mother, an ordinary name for women.

CHINNA MASTAKA, in Hindu mythology, is a form of Parvati as Kali, and possibly is the sacti of Siva, in the form of Kapali. She is described as a naked woman with a necklace of skulls. Her head is almost severed from her body, and her blood is spouting into her mouth. In two of her hands she holds a sword and a skull. Mr. Ward states that this goddess was so insatiate of blood, that, not being able at one time to obtain enough of that of giants, she cut her own throat to supply herself therewith. Ward derives the name from Chinna, cut off, and Mastaka, a head.—*Col. Myth. Hind.* p. 94. See Kerari.

CHINNERETH, called also Gennesareth, Tiberias, Galilee, and Bahr ul Tibarrah, a sea or lake formed by the river Jordan. It has many fish. Its surface is upwards of 300 feet below the Mediterranean, and it is enclosed by steep hills 300 to 1000 feet high. It is 12 miles long and 6 broad.

CHINNY. TAM.? A Travancore wood of a rather dark colour, sp. gr. 0.515. From 8 to 16 feet in circumference; used for building canoes.—*Col. Frith.*

CHINRAIPATAN, a town in Mysore famed for a Jaina statue, estimated 54 to 70 feet high. It has been cut out of the solid rock.

CHIN-SAN, or Golden Island, is in the middle of the Yang-tse-kiang, river of China, where the width is near three miles. It is the property of the emperor. It is interspersed with pleasure-houses and gardens, and contains a large monastery of priests, by whom the island is almost entirely inhabited.—*Macartney's Embassy*, i. p. 27.

CHINSURAH, a neat town on the right bank of the Hoogly river, in lat. 22° 54' N., and long. 88° 26' 40" E., in the neighbourhood of Calcutta. The Dutch established themselves there in A.D. 1675, but they came in contact with the British on the field of Bidera, four miles to the west, and were defeated; and finally, about 1825, they received Java for it in exchange. The college building was formerly the house of Perron, the French general and deputy of Sindia in the Doab.

CHINTA CHETTU. TEL. *Tamarindus Indica*, L.

CHINTAMANI, a mythical wish-gem of the Hindus, supposed to yield to its possessor all that he may desire. The word is Sanskrit, from Chinta, thought, and Mani, a jewel, and is the name of a romantic epic Tamil poem, representing the Jaina system in an attractive form. It is of considerable merit, and is regarded as the highest classical authority in that language, but its style is difficult. It contains 15,000 lines, and probably belongs to the tenth century. It was written by an avowedly Jaina author.

CHINTZ.

Sita,	DUT.	Chit,	MALAY.
Indiennes,	FR.	Chitas,	PORT.
Zitze,	GER.	Zaraza, Chites, . .	SP.
Chint, GUJ., HIND.,	PERS.	Simai guddu, . . .	TAM.
Indiane,	IT.	„ gudda,	TEL.

Fast-printed calicoes of different colours, impressed upon a white or light-coloured ground. The name is from chinta, a spot, or spotted. In the Madras Presidency, the principal sites of this manufacture are the towns of Masulipatam, Arnee, and Sydapat. Those of Masulipatam are called Kalam-kari, literally firm colour; they are of various hues. Each piece is 2 cubits in breadth and 12 in length, priced at from 4 to 12 rupees each; and it is used for under-garments by Hindu women. Those of Arnee and Sydapat are 8 by 2 cubits, sold at 1 to 3 rupees each; they are used for pillow-covers and other purposes, as well as the under-garments of humbler native women. Some of the chintzes of Masulipatam and of the south of India are as beautiful in design as they are chaste and elegant in colour.—*M'Culloch*; *Mr. Faulkner*; *M.E.J.R.*; *Dr. Watson*.

CHINVAT, of the Parsee religion, is a mythological bridge. On a death occurring, a dog is brought to look at the corpse, that its passage over Chinvat may be secured.

CHINWA. HIND. *Panicum miliaceum*.

CHIN ZOOAY. BURM.? Meaning elephant's teeth, a wood of maximum girth 1½ to 2 cubits, max. length 10 feet, abundant on the hills inland, always on rocky, barren ground, in mountainous or hill districts, all over the Tenasserim provinces. When seasoned, sinks in water. This wood is the hardest and strongest known in these latitudes, perhaps anywhere in the world. It is only procurable in such rocky spots as no other tree will grow in. It cuts up, as yendaik and other hard woods do, with huge cracks through it; but is valuable for the edges of phillester planes, for

spokeshaves, and for purposes in which much scantling is not required.—*Captain Dance*.

CHIOCOCCA JAVANICA, the Java snow-berry, a parasitical shrub, found on the mountains of Java upon trees.—*Eng. Cyc.*

CHIONANTHUS, a genus of trees. *Ch. albidiflora*, *Thw.*, the taccada gas, grows up to 3000 feet in Ceylon. *Ch. intermedia*, *Wight* (the *Lenociera inter.*, *Wight*), grows on the Animallay at 5000 feet. *Ch. ramiflora*, *Roxb.*, is a tree of the Moluccas; and *Ch. leprocarpa*, *Thw.*, is a small tree growing at 3000 to 4000 feet in the Central Province of Ceylon.—*Thw.*

CHIONE, a genus of molluscs, of which many species occur in Indian seas.

CHIPPEVADU, Chippiga. TEL. A tailor.

CHIPPI, a beggar's bowl made of the shell of the sea, or double cocoanut, *Laodicea Seychellarum*.

CHIPULU GADDI. TEL. *Aristida setacea*, *Retz*; *Chætaria set.*, *Beauv.* The words mean broom or sweeping-grass, from the use to which it is applied.

CHIPURA TIGE. TEL. *Cocculus villosus*.

CHIR, in Chamba, *Armeniaca vulgaris*, apricot; *Prunus Armeniaca*. In the N.W. Himalaya, *Pinus*, sp. *Dar chir*, *P. excelsa*. *Drab chir*, *P. longifolia*.

CHIR. HIND. *Phasianus Wallichii*.

CHIRA of the Periplus, an ancient kingdom that seems to have been formed out of the Pandya dominions. The Chira seem to have possessed also Kerala, and to have sent an embassy to the Romans, to whom the Chira prince was known as O Kerobothras. See Chera.

CHIRAGADAM. TEL. *Batatas edulis*, *Ch.*

CHIRAGH. PERS., HIND. A lamp. Ba-charagh, an inhabited house or town. Be-charagh, in ruins. Chiragh ka tel, lamp oil. In Southern India, oil of large-seeded *Ricinus communis*. In N. India, poppy and other oils are used for lamps.

CHIRA KURA. TEL. *Amarantus polygonoides*.

CHIRA MELLA. HIND. *Phyllanthus longifolius*.

CHIRAN. HIND. *Prunus Armeniaca*.

CHIRANJI. TEL. A dying root of *Rubia cordifolia*, in the bazars of the Northern Circars.

CHIRA SAMUDRA. SANSK. In Hinduism, the sea of milk on which the serpent Sesha rested when Vishnu was reposing. See Balaji.

CHIRATALA BODA. TEL. *Dalbergia scandens*, *R. iii.* 232.

CHIRAUULI. HIND. *Buchanania latifolia*.

CHIRAUNDA. HIND. *Adelia serrata*.

CHIRAYIT. HIND. *Agathotes chirayta*.

CHIRCHA or Chirtsa. CAN. *Felis jubata*.

CHIRCHIRA, also Chirchitta. HIND. *Lycium Europæum*, also *Achyranthes aspera*, resembling the *Penicillaria spicata*; the people believe if a person eat one chitak of its grain, he will not be hungry for 21 days.

CHIRETTA. HIND. Greyat root.

Kussub-uz-zerireh, . . .	ARAB.	Create,	FR.
Kalapnath,	BENG.	Creyatta, Kriatt, . . .	HIND.
Kala-megh, Maha tita, . .		Kairata,	SANSK.
Ton-kha-kyi,	BURM.	Atadi,	SINOH.
Kiriat,	CAN.	Sherait-kuchi, . . .	TAM.
Kreat,	DUKH.	Lela vemu,	TEL.

Chiretta, or chirayta, or kriat, for all these pronunciations are in use, is the name given to several plants, all of them closely allied in medicinal properties to gentian, for which several of

them are perfect substitutes. Like gentian, chiretta promotes digestion, improves the appetite, and gives a tone to the system, without producing much stimulant effect, or causing constipation. It contains a resin and yellow bitter matter, on which the activity of the plant depends. Its use is admissible in all inflammatory states of the intestinal canal, and in febrile diseases. The chiretta of the bazars is the produce of the several following plants:—

Adenema hyssopifolia, the chota or small chirayta, is common in various parts of Southern India, is very bitter, also somewhat laxative, and much used by the natives as a stomachic.

Agathotes chirayta, *Don.*, *Ophelia chirayta*, *Grisebach*, *Gentiana chirayta*, *Fleming*, north of India, and Morung hills. All parts of the plant are extremely bitter, and are identical in composition with the common gentian. It is highly esteemed as a tonic and febrifuge all over India. It is a common and abundant plant in the bazar, supplied chiefly by the lower ranges of the Himalaya.

Andrographis paniculata (*Justicia paniculata*, *Roxb.*), Kalamagh, *BENG.* Kalupnath or Mahatita, *HIND.*, is the genuine or original chiretta.

Chironia centauroides of Roxburgh (*Erythraea Roxburghii*, *Don.*), is another and powerfully bitter plant found in India.

Cicendia hyssopifolia (syn. *Exacum hyssopifolia*), common in various parts of the East Indies; the whole plant is bitter and somewhat laxative; is used by the natives as a stomachic.

Exacum bicolor grows rare on the Neilgherries below Kotagherry, and abundant a mile below Nedawuttum, where it flowers during the autumnal months. This species enamels the swards of the Western Ghats with its beautiful blossoms, has the same bitter stomachic principles for which the *Gentiana lutea* is so much employed, and, it is believed, may be used with advantage in lieu of gentian for medicinal purposes. The infusion is a mild pure bitter. It is known in Mangalore as country creat, and sold there at 1 anna 6 pie per pound.

Exacum tetragona is another species of this genus, and is called Ooda chiretta, or purple chiretta.

Ophelia angustifolia, *Don* (*O. Swertia*, *Royle*), is called pukarree chiretta, and is substituted for the true chiretta.

Ophelia elegans, *Wight*, grows plentifully in several parts of the Madras Presidency; is considered febrifuge by the native physicians, who prefer it to the Himalayan chiretta. It grows plentifully in the Jeypore zamindari of Vizagapatam, and is annually exported, as Silaras or Selajit, to the value of about Rs. 2500. The infusion of *O. elegans* has a powerful bitterness.

Ophelia alata and *Ophelia chiretta* seem to be used similarly; they grow in the Himalaya.

Villarsia Indica, *V. artistata*, and *V. nymphaeides* occur in every part of India.

Chiretta may be regarded as a type of the simple bitters, so many of which have been employed in Europe as febrifuges. For such purposes it is employed in India, and it will do whatever a simple bitter can in stopping intermittents. Chiretta is of much service in convalescence from fever. It is one of the few articles of the Indian Materia Medica which is in every respect an

adequate substitute for the corresponding European article. Chiretta is a useful vehicle for other remedies. It is the basis of the celebrated drogue amere, a compound of mastic, frankincense, resin, myrrh, aloes, and creat root, steeped in brandy for a month, and the tincture strained and bottled. Chiretta is met with in a dried state, tied up in bundles, with its long slender stems of a brownish colour, having the roots attached, and which have been taken up when the plant was in flower. It is procurable in all native druggists' shops. The extracts of chiretta agree in being valuable bitter tonics. Both these and gentian contain a peculiar principle, termed the gentiac acid. The dose is ten to thirty grains twice or three times daily, usually prescribed with sarsaparilla, hemidesmus, or iron (*Beng. Phar.* p. 290). The wine of chiretta is cordial bitter and tonic in a dose of two fluid drachms. A compound tincture of creat is prepared by creat root six ounces, myrrh and aloes each one ounce, French brandy two pints; macerate for three days, and strain. This preparation is equivalent to the celebrated drogue amere. Its effects are tonic, stimulant, and gently aperient. It is a valuable preparation in the treatment of several forms of dyspepsia and torpidity of the alimentary canal, in a dose of one fluid drachm to half an ounce. — *Faulkner, Beng. Phar.*; *On Chiretta*, by *Dr. Cleghorn*; *Dr. J. L. Stewart*.

CHIRGHIA, a Pukhta war-cry. Chirgha wal, a fighting man.

CHIRI. SANSK. *Wrightia antidysenterica*; *Mimusops hexandrus*.

CHIRI. TEL. A term applied to several plants resembling others:—

Chiri alli, *Villarsia cristata*, *Spreng.*

Chiri annem, *Briodelia scandens*, *Willd.*

Chiri benda, *Sida cordifolia*, *L.*

Chiri bikki, *Gardenia gummiifera*, *L.*

Chiri chatarasi, *Dentella repens*, *Forst.*

Chiri dudduga, *Alphonsea lutea*, *H.*

Chiri galigeru, *Trianthema*, *L.*

Chiri giligichecha, *Crotolaria laburnifolia*, *L.*

Chiri gummodu, *Batatas paniculata*, *Ch.?*

Chiri jeguru, *Cluytia*, *sp.*

Chiriki, SANSK., fruit of *Buchanania latifolia*.

Chiri koti goru, *Pterolobium lacerans*, *R. Br.*

Chiri kura, *Amarantus polygonoides*.

Chiri malla, *Jasminum angustifolium*, *Vahl.*

Chiri manu, *Conocarpus latifolia*.

Chiri nanupala, *Euphorbia*, *L.*

Chiri palleru, *Tribulus lanuginosus*, *L.*

Chiri piaz, *HIND.*, *Allium rubellum*.

Chiri sanagalu, *Ervum*, *sp.?*

Chiri teka, *Clerodendron*, *sp.*

Chiri tekku, bastard teak, *Erythrina Indica*, *Wormia*

bracteata.

Chiri tummi, *Leucas*, *R. Br.*

Chiri vanga, *Solanum melongena*, *L.*, small var.

Chiri veru, *Oldenlandia urabellata*, *L.*

Chiri ulava, *Rhynchosia rufescens*, *D.C.*

CHIRIA. *HIND.* A bird; hence Chiriya-Mar, a bird-catcher, a low caste fowler.

CHIRIMI. *MALAY.* *Cicca disticha*, *Linn.*

CHIRITA SINENSIS, the manneen-chung of the Chinese, a dwarf species of *Lycopodium*, highly prized by that people. — *Fortune's Tea Districts*, p. 8.

CHIRIT MURAL. *MALAY.* *Cacutheouc*.

CHIRIYA-GHAS. *BENG.* *Helopis annulatus*.

CHIR-MITI. *HIND.* *Abrus precatorius* seeds.

CHIR-MUTTI. *HIND.* *Leptropis cordifolia*.

CHIR-NATH. *HIND.* Fir cones of *Pinus longifolia* and *P. Gerardiana*.

CHIRNDI. HIND. *Litsaea*, *sp.*; *Adelia serrata*.

CHIRNDU, *Eleodendron dichotomum*.

CHIR-ODHELI or Chir-vadhal of Dehra Ghazi Khan (hills), obtained from the tamarisk (*F. turus* or *F. dioica*), said to be called pinjwa in other parts. This occurs in nodules, highly friable, of a granular texture.—*Powell's Handbook*.

CHIROLI. HIND. *Prunus Armeniaca*.

CHIRONIA CENTAUROIDES. *Roxb.*

Erythraea Roxburghii, Don. | Nye, HIND.

This plant grows in several parts of India; its leaves and stalks are powerfully bitter, and are found in the bazars as one of the chirettas.—*O'Sh.*

CHIROR. HIND. *Mahonia Nepalensis*.

CHIRRU. HIND. *Xanthium strumarium*.

CHIRU DEKHU. TAM. *Clerodendron serratum*, *Blume*.

CHIRUGU CHETTU. TEL. *Caryota urens*.

CHIRUNJE. HIND. A red dye from *Buchanania latifolia*.

CHIRU NUTI. BENG. *Amarantus polygonoides*, *Roxb.*; *Oxystelma esculentum*, *R. Br.*

CHIRU-PARAM. TAM. *Riedleia corchorifolia*.

CHIRUTA-ITA. TEL. *Phoenix fariuifera*.

CHIRWI, in the Multan division and Derajat, means the best kind of split and dried dates of the Phoenix dactylifera; the word seems from *chirna*, HIND., to split.

CHISHTI, a tribe of Arab descent in Multan, and at Bijapur in the Dekhan. Those on the banks of the Sutlej river are peaceful and industrious, but strict and bigoted.

CHISHTIAH, a sect of Mahomedan fakirs.

CHIT. HIND. Chintz; sprinkled, hence,—

Chit-Abra, a printed cotton.

Chit-Pattu, a woollen wrapper with a chit or print pattern.

Chit-Rahdar, a print with a striped pattern.

Chit-Bundri, spotted print.

Chit-Butidar, sprigged print.

Chit-Marpech, sprigged print.

Chit-Shakargah, print with figures of animals.

Chit-Nakl-irani, a kind of Persian print.

CHIT, in the doctrines of the Sri-Sampradaya sect of Hindus, means the spirit of Vishnu; this, with Achit, or matter, and Ishwara, or god or ruler, being the three predicates of the universe. In their views, Vishnu is Brahma, before all and creator of all. See Sri-Sampradaya.

CHITA. See Cheeta.

CHITA. BENG., HIND. *Plumbago rosea*; *P. Zeylanica*, *Linn.*

CHITA BAGNU. HIND. *Populus alba*.

CHITA BANSAL. HIND. *Ipomoea turpethum*.

CHITAK, a measure of weight equal to 914 grains.

CHITAI, Chitra, Chitri. HIND. *Axis maculatus*, *Gray*.

CHIT-AMINDALU NUNA. TEL. Oil of small-seeded *Ricinus communis*, castor-oil plant, used medicinally.

CHITANA. HIND. *Pyrus Kumaonensis*.

CHITANKALOO. TEL. *Wrightia tinctoria*.

CHITA-PULI. TEL. *Felis jubata*, *Schreber*.

CHITA-RATHI. MALEAL. *Alpinia racemosa*.

CHITARKOT, a hill in the Banda district, N.W. Provinces of India, with the Paisuni river at its base. There are thirty-three Hindu shrines; and many pilgrims still visit them, and circumbulate (pradakshana) the hill.—*Imp. Gaz.*

CHITAS. PORT. Chintz.

CHITA SINJI. HIND. *Melilotus leucantha*.

CHITAWALA. HIND. *Senecio angulosus*.

CHIT BATTO. HIND. *Trifolium pratense*.

CHITE ANKALU. TEL. *Wrightia tinctoria*.

CHITES, also Zaraza. SP. Chintz.

CHITIJARI. HIND. *Aconitum heterophyllum*.

CHITIKESWARUM. HIND. *Poinciana elata*. CHITIMIRK, HIND., also Chiti-phul, *Heliotropium brevifolium*.

CHITI-MORT. HIND. *Desmodium argenteum*.

CHITI MUTI. TEL. *Sida acuta*, *Burm.*

CHITI SIRIN. HIND. *Cedrela toona*; *C. serrata*.

CHITKA. BENG. *Bauhinia acuminata*.

CHITKABRA. HIND. *Uraria chetkubra*.

CHITKAN of Hazara, an ear-ring.

CHITKEE. HIND. Snapping the fingers.

CHITLINTA KURA. TEL. *Marsilea Coromandelina*; *M. minuta*, *Heyne*, 54; also *Riedleia corchorifolia*.

CHITONIDÆ, the Chiton family of molluscs.

CHITOOA-BORA. BENG. *Polypodium glabrum*.

CHITPATRA. HIND. *Marlea begonifolia*.

CHITPEKALARA, in Arakan, slaves who had been taken in battle.—*Wilson*.

CHITRA. HIND. *Staphylea emodi*; *Drosera muscipula*. Lal chitra is *Plumbago Zeylanica*.

CHITRA, also written Chaitra, and Chaitram, the first month of the Tamil solar year, answering to the Hindu Vaisachha, when the sun is in the sign Mesha. But this name is also that of the last month of the Hindu solar year, used everywhere (excepting in the Tamil country) when the sun is in the sign Min, answering to the Tamil Pungoni. Lastly, Chaitra is the name of the first month of the luni-solar year, which begins on the new moon preceding the sun's entrance in the sign Mesha. This variety of significations of terms so nearly resembling each other requires the greatest attention, when advertent to dates, and reading books written in different countries.—*Warren*.

CHITRA. BENG. *Cucumis Madraspatanus*; also HIND., *Berberis lycium*, *B. Asiatica* or *B. aristata*.

CHITRAGUPTA, pronounced Chitrgoputr, the registrar of Yama, the recorder of the dead. When Yama sits in judgment on the dead, Chitragupta examines the register in which the good and bad deeds of men are recorded. From Chitru, to write, and Goopta, hidden. He had several sons, from whom the different tribes of Bengal Kayasths derive their origin.—*Sribastab*, Ambashtha, Karan, Bhattanagar, Gaura, Valmika, Mathur, Saksena, Aithana, Kulasreshtha, Nijam, Suradhwaja.—*Dalton, Ethnol. of Bengal*, p. 313.

CHITRA INDICA, one of the Chelonia or tortoises. It inhabits India.

CHITRA JAVANIKA, a painted cloth, a screen or veil suspended in a temple before the adytum; according to Malanka, it is rather arras or tapestry; he describes it as cloth covering the walls of a temple.—*Hind. Theat.* ii. p. 74.

CHITRA KOOKA. SANSE. From Chitra, speckled, and Kooka, the peak of a hill or mountain. An isolated hill on the bank of the Pisani river, 50 miles S.E. of the town of Banda in Bundelkhand, in lat. 25° 12' N., and long. 80° 47' E. The whole neighbourhood is Rama's country during his exile. Every head-

land has some legend; every cavern is connected with his name. It is a sacred spot; crowded with temples and shrines of Rama and Lakshmana. Many thousands annually visit the spot, and round the hill is a raised footpath, on which the devotee with naked feet treads, full of pious awe. It was the seat of Valmiki, the sage and poet, author of the Ramayana. The hill is crowded with monkeys. The river is lined with the landing-places called ghats, and flights of stairs for ceremonial ablutions.

CHITRAL, or Little Kashgar, is beyond the Belut Tagh mountain. See Bucharia; Eastern Turkestan.

CHITRA-MUL. HIND. *Thalictrum foliosum*.

CHITRA-MULAM (Tella, Nalla, and Erra, white, black, and red). A generic name for species of plumbago.

CHITRA-RATHAN, the chief musician of Indra, who rides in a painted car. On one occasion it was burned by Arjuna, the confidential friend and agent of Krishna, or the sun.

CHITRA VANI. SANSK. *Plumbago Europæa*.

CHITRI CHIRUYA. BENG. *Urochloa panicoides*.

CHITRIKA. TEL. *Limonia pentagyna*, R.

CHITTA-AMADUM. TEL. Castor-oil.

CHITTA-BURKANI, also Chittaganda. TEL. *Leggadia lepida*, Jerdon.

CHITTABUTE of Murree, *Abelia triflora*; also *Buddlea crispa*.

CHITTA-DUDAGA, *Guatteria cerasoides*, Dunn.

CHITTAGONG, or Islamabad, a town which gives its name to a district of British India along the N.E. coast of the Bay of Bengal. The town is built on the bank of the Karnaphuli river, in lat. 22° 21' 3" N., and long. 91° 52' 44" E. The district is bounded on the N. by Tipperah, S. by Arakan, E. by the Yonadoug mountains, and W. by the Bay of Bengal, and has an area of 2322 square miles, and a population of 1,006,422 souls. It is a low strip of coast about 165 miles long, with many large tidal creeks; and the central parts opposite the islands of Maslul and Kutabadia much resemble the Gangetic Sunderbuns. Since historic times it has been subject successively to Tipperah, to the Afghan rulers of Bengal, to the raja of Arakan, to the Delhi empire; and it was ceded to the British East India Company in 1760. The Portuguese descendants are known as Feringhi. They were 854 in 1872; the Nat, 949; the Magh, 30,026; and the Rajbansi, 10,852; Brahmans, 22,657; and Kayasths, 68,916. The Lascars of the coasting and foreign-going ships are largely from Chittagong. The Rajbansi are the offspring of Bengali women and Burmese husbands. 70.5 per cent. of the population are Muhomedans, the Hindus 26.7 per cent.—*Imp. Gaz.*

CHITTAGONG HILL TRACTS are a portion of the great chain of mountains running from Assam southwards to Cape Negrais, and the Blue Mountains, on the frontier of Chittagong, rise 8000 feet above the sea. Several rivers rise in these mountains, amongst others the Karnaphuli, which flows into the Bay of Bengal. The hill tribes of Chittagong call themselves Kyoung-tha, or sons of the river, and Toung-tha, or sons of the hills. The latter, to which the Lushai belong, are the more savage and independent, and speak different languages. The former have a written language, and even possess several copies of the Raja wong, or History of the Kings of

Arakan. They are of Arakanese origin, speak the Ra-khui dialect, and are Buddhists. All are Mongolian in physique. They have an honest, bright look, with frank and merry smile, and their look is a faithful index of their mental characteristics. They live in bamboo houses raised above the malaria of the ground. They practise Jum, Cheena, or Kumari cultivation, burning down the jungle to prepare the soil for mixed seed scattered broadcast, and moving off to a new site next season. And they have a mild form of debtor slavery, which Captain Lewin thinks the British too suddenly interfered with, so that the hillmen fall victims to the usurer.

The Kyoung-tha, or Jumia Magh, have 15 clans, who dwell in village communities under a Roājā, or village head.

The Tongg-tha tribes, a wilder and less civilised group, are the Tipperah, Mrung, Kumi, Mro, and Khyeng, Bangi, Pan-kho, Lushai or Kuki, and the Shindu, the last four being independent. Their villages are generally situated on lofty hills. They worship the elements.

The Chakma (Tsak or Tsakina, or in Burmese Thek) is the largest of all the tribes. It has 40 clans. Their habits are similar to those of the Kyoung-tha. The tribes all practise the Jum or Kumari form of agriculture; and rice, cotton, tea, tobacco, and potatoes are their chief crops. The elephant, the rhinoceros, the tiger, and the leopard are numerous, with the Malay black bear, the wild buffalo, the sambur (*Rusa Aristotelis*). The python grows to a large size.

Among the independent tribes beyond the British border, prisoners of war are sold like cattle. Raids are caused by the usage of wehr-geld, which they call gongg hpo, or the price of a head; for when a villager dies, his friends charge the village which he may have last visited with his death, and demand a price for his life. Raids for women seem to keep up the necessary supply. Chastity is enforced only after marriage. All the unmarried lads sleep in one house in the village, under the care of a 'gongg' or headman. The merry-makings and customs which are connected with this 'bachelor's hall,' as Colonel Dalton calls it, are the same as in the Kol and Gond countries. In the hills marriages are unions of affection, not of convenience or interest. Girls marry at 16, lads at 19. The most favourite offering to a sweetheart is a flower; and the lover will often climb the hills before dawn to procure the white or orange blossom of some rare orchid for the loved one's hair. One of Captain Lewin's police sought a week's leave of absence on this ground: 'A young maiden of such a village has sent me flowers and birnee rice twice as a token, and if I wait any longer they will say I am no man.' Among the Kyoung-tha, a leaf of pawn, with betel, and sweet-spices inside, accompanied by a certain flower, means 'I love you.' If much spice is put inside the leaf, and one corner turned in a peculiar way, it signifies 'Come.' The leaf being touched with turmeric means 'I cannot come.' A small piece of charcoal inside the leaf is 'Go, I have done with you.' The love songs are as pure as they are pretty, and no improper ditties are allowed in the hearing of the village maidens. As the lads and lasses work in a crowd at harvest times, they respond in chorus, or, when the leader has finished, the whole party break out into the hoia or hill

call, like the jodel of Switzerland, and the cry is taken up from hill to hill, till it dies away in the distant valleys. In their mode of kissing, instead of pressing lip to lip, they apply the mouth and nose to the cheek and give a strong inhalation. They do not say, 'Give me a kiss,' but 'Smell me.' The religion of these tribes is a mixture of Buddhism and nature-worship. At the Maha Muni temple in Arakan, the bamboo is adored by some as the impersonation of the spirit of the forest. But wherever, as in the case of the Chakma, the tribes come into contact with the Bengali, they show a tendency to gravitate towards Hinduism, the caste of which would soon kill the joyousness and check the freedom of their life. The Khumia and Kuki tribes occupy the hills of Sylhet, Tipperah, and Chittagong; the Kuki at the tops of the hills, and the Khumia on the skirts. The Kuki are the ruder or more pagan race, though also tinctured with Hinduism. They term their chief deity Khojein Putiang, to whom they sacrifice a gyal; and to an inferior deity, named Shem Saq, a rude block of wood put up in every quarter of a village, a goat is offered; and they place before it the heads of the slain in battle, or the heads of animals killed in the chase. The Kuki say that they and the Mug are the offspring of the same progenitor.—*Captain Lewin.*

CHITTAGONG WOOD. *Chickrassia tabularis*, is used at Madras for furniture. It is light, cheap, and durable.

CHITTAK. **HIND.** An Indian weight, equal to 914 grains = 2 oz. 39½ grs. avoird.

CHITTA LINNY. **TAM.?** A Travancore wood of a red colour, sp. gr. 0.847, 1 to 1½ feet in circumference; used for furniture.—*Col. Frith.*

CHITTAMANAK YENNAI. **TAM.** Castor-oil. Chittamudapu, **TEL.** *Ricinus communis*, the small variety, from the seeds of which only the medicinal castor-oil is expressed.

CHITTAMATTA. **TEL.** *Gardenia gummiifera*.

CHITTA-RATTA. **MAL.** *Alpinia galanga*.

CHITTA-ROHI, in Northern India, sand with salt efflorescence.

CHITTA TUMIKI. **TEL.** *Diospyros tomentosa*.

CHITTA YELKA. **TEL.** *Leggada lepida*.

CHITTEDURU. **TEL.** *Vanda Roxburghii*.

CHITTENTA KURA. *Riedleia corchorifolia*.

CHITTHI. **HIND.** A note, a letter, an order or demand; hence Chit-navis, a note-writer.

CHITTI ANKUDU. **TEL.** *Wrightia tinctoria*. Chitti Benda, *Pavonia odorata*; Chitti Gara, *Capparis brevispina*; Chitti Papara, *Citrullus colocynthis*.

CHITTI-PHUL. **HIND.** *Heliotropium brevifolium*.

CHITTITA CHETTU. **TEL.** *Phoenix fariuifera*.

CHITTORE or Chetur, a town in Rajputana, in the kingdom of Mewar. Its dynasty are Rajput, and claim to be descended from Lob, the eldest son of Rama, of the Solar dynasty. They say that they were first ruling at Balabhipura, a city in the gulf of Cambay, but their capital was laid waste by a son of Nushirwan of Persia, in A.D. 524. The Rajput queen escaped the general destruction, and gave birth to a son, named Goho, from whom the rajas of Udaipur are descended. Goho established the kingdom of Edur, and eight princes succeeded him on the throne. The race

seem to have remained in the desert till the middle of the 8th century, but in A.D. 727 Bappa took Chittore. Shortly afterwards Bappa proceeded to Saurashtra, and married the daughter of Esupgole, prince of the island of Bunderdhiva. With his bride he conveyed to Chittore the statue of Vyan-mata, the tutelary goddess of her race, who still divides with Eklinga the devotion of the Gehlot princes. The temple in which he enshrined this islandic goddess yet stands on the summit of Chittore, with many other monuments assigned by tradition to Bappa. Bappa is not a proper name, it signifies merely a child. He is frequently styled Syeel, and in inscriptions Syeel Adhes, the mountain lord. The Mori prince from whom Bappa took Chittore was of the Tak or Takshak race, of whom Nagnecha, Nagani Mata, was the mother, represented as half woman and half serpent, the sister of the mother of the Scythic race, according to their legends. Many rites of the rana of Mewar's house are decidedly Scythic. According to Sir H. Elliot, however, when Mahomed bin Kasim, the general of Walid, overran Gujerat about A.D. 718, and advanced to Chittore, Bappa met and entirely defeated him, and after this Bappa was raised to the throne of Chittore. After a long and prosperous reign, Bappa abdicated and departed to Khorasan, Tod says to Scythia. In the reign of Khuman, his great-grandson Mahmud, governor of Khorasan, invaded Chittore, but was defeated and expelled by Khuman after twenty-four engagements. Baber, 1527, sustained a great defeat at Futehpur Sikri at the hands of the Rajput Rana Singha, chief of Chittore; but in 1527 Baber led his army a second time against the Rajput prince, whom he overthrew, and completely broke his power. While ruled by Oody Singh, Chittore was invested by the emperor Akbar, and captured after a prolonged siege. Oody Singh, at the approach of the imperial army, withdrew to the Aravalli hills, and left Jeymul, the Rajput chief of Bednore, to defend his kingdom; Jeymul, with 8000 of his men and women, perished on the occasion, and 74½ maunds of plunder were taken away by the army of Akbar. The capture of Chittore was regarded at the time by the Rajput race as the greatest of misfortunes, and they have perpetuated the remembrance of it by impressing on all their correspondence the figures 74½. Oody Singh did not re-occupy Chittore, but founded Udaipur, which he made his capital.—*Elliot's Hist. of India; Tod's Rajasthan*, i. p. 594; *Elphinstone*.

CHITT-PAWAN. **MAHR.** A Konkanistha Brahman.

CHITTULDROOG, a hill fort which gives its name to a town and district in the Nagar division of the Mysore kingdom, 120 miles N.W. from Bangalore. It gets its name Chutta thul droog, or the Umbrella Hill, from its shape. The district has an area of 4471 square miles, and a population in 1871 of 551,360. It is a sterile tract, with little rainfall. It was long held by a Polygar chief of the Beder race, and the present non-Aryan races are the Beder 90,050, the Wakkaliga 69,735, Golla 46,296, and the Kuruba 35,459, with out-castes 58,245, and wandering tribes 44,142. The Mahomedans are 18,068, and the Siva Chaktars or Lingaet, 44,142. The district in the early years of the Christian era was largely of the Jaina faith; and there are many

inscriptions of the Chalukya, Ballala, and Vijayanagar dynasties, and there are now several maths or Hindu monasteries. Here, on the 6th August 1809, East India Company's officers induced the native soldiers to mutiny, but they were attacked and defeated by detachments of the British army.—*Imp. Gaz.*

CHITTUR, a town and fort in the N. Arcot district, 98 miles west from Madras, and 1100 feet above the sea. It is in lat. 13° 14' N. The hills are rugged and barren; they are intersected by a vein of iron ore. It is built on the south side of the Pooney river, which runs through the valley, and joins the Palar.

CHITTUR DULLA. SANSK. *Marsilea quadrifolia*.

CHITULIA, a genus of water-snakes of the order Hydridæ. *C. mornata* and *C. fasciata* inhabit the Indian Ocean.

CHITZ. MAHR. *Tamarindus Indicus*.

CHIU. HIND. *Rhododendron arboreum*, also *Euphorbia Royleana*.

CHIUN, of the prophet Amos, v. 26, is supposed by Calmet to be Bal-peor, Chivin, or Siva.

CHIURACY? a Penang wood of a brown colour, sp. gr. 1.081; used for beams.

CHIVAN AMELPODI. MALEAL. *Ophioxylon serpentinum*, *Linn.*

CHIVATI. MALEAL. A small coasting vessel of Malabar.

CHIVENDI. TAM. A Ceylon timber tree, about 8 inches in diameter and 20 feet in height; used in housework.—*Edye, Ceylon*.

CHIVES, *Allium schoenoprasum*, a variety of the onion, held in estimation for its leaves and small bulbs, and used in soups and salads. Propagated either by slips, or dividing the roots at any season, but best after the rains; 9 or 10 inches of space must be allowed between each bulb. Requires plenty of water, and protection from the vertical rays of the sun.—*Riddell*.

CHIVIKI VELAMA. TEL. *Eleusine coracana*.

CHIWANA. HIND. A place for the cremation of the Hindu dead, called also Chihæe and Chihænee. These three terms are derived from Chæe, ashes. Marg'bat, Bhoeedugdha, and Smusan or Samsan (in Benares), are also employed to signify the burning place.

CHLIATÆ or the Kallat, with the Kankli, Kapchak, and Kharlik, are four Turkish tribes descended from the Oguz Khan.—*De Guignes*, ii. p. 9; *Yule, Cathay*, i. p. 165.

CHLORANTHUS BRACHYSTACHYS, one of a genus of plants belonging to the natural order Chloranthaceæ; is a native of the coast of Java. Its properties are like those of *C. officinalis*.

CHLORANTHUS INCONSPICUUS. *Smith*.

Chu-lan, CHIN. | Ki-chau-lan-hwa, . CHIN.

Its small flowers, along with those of *Aglaia odorata*, are mixed with certain kinds of tea, called after the plant, Chu-lan-cha. This is the scented caper of commerce, a very excellent but expensive tea.—*Smith*.

CHLORANTHUS OFFICINALIS, a smooth shrub 3 to 4 feet high, a native of Java, in the moist woods 1500 feet above the sea. All the parts are powerfully aromatic. The roots, if quickly dried, retain their properties for a long time; and the mountaineers employ them in infusion as a remedy for spasms; also, united with anise or Ocimum, in small-pox. In fevers it is

said to be of great service. It is a powerful and active stimulant.—*Engl. Cyc.*

CHLORIDE OF ZINC. Captain Keppell believes Sir William Barnett's solution of chloride of zinc, properly applied, the only composition yet known that will preserve anything from the white ants.—*Keppell's Ind. Arch.* ii. p. 189.

CHLORITE is found in connection with tin. Portions of the clay-slate east of Tavoy contain chlorite slate. The Moongnee stone of Orissa is said to be chlorite slate.

CHLOROXYLON SWIETENIA. *Roxb.*

Swietenia chloroxylon, Roxb.

Satin-wood,	ENG.	Porasham,	TAM.
Bhree,	MAHR.	Kodawah porasham, . .	
Mal burute, or flowered		Billuda,	TEL.
satin; Buruta,	SINGH.	Billu chettu,	
Mududa,	TAM.	Bilugu?	URIA.
Vum-maai,		Bhayroo,	

The satin-wood tree grows in Ceylon, chiefly in the eastern districts, where it attains a large size, and is esteemed next to the Calamander in value. It grows in Coimbatore, in the Animallay hills, where Dr. Wight got planks 15 inches broad. Indeed, some of the finest satin-wood to be anywhere seen is to be met with near the foot of the Animallay, though even there this valuable wood was rapidly disappearing under the cultivator's axe. It grows at Gokak; but Dr. Gibson had never seen it reach beyond the size of a small tree, which, when straight (seldom the case), would afford a log squaring 3 inches. It is found only in the Padshapoor jungles, and in those of the upper Mool, in the Ahmadnaggar collectorate. In Ganjam the tree is not so common as in Bodo godo; and it is said to be still more plentiful in Mohery and other taluks to the south. It is a most serviceable hard wood, well suited for naves of wheels, and, were it procurable in any quantity, for all framework requiring strength and durability. The Peradenia bridge, a single arch of 205 feet on the road to Kandy, was designed for and principally executed in this wood. The wood is very close-grained, hard, and durable, of a light orange colour, takes a fine polish, and is suited for all kinds of ornamental purposes, but is somewhat apt to split. For picture frames it is nearly equal to American maple. The timber bears submersion well; in some instances it is beautifully feathered, and flowered or feathered satin-wood, when first polished, is one of the most beautiful woods in the world. Mr. Rohde had seen specimens surpassingly beautiful; but the valuable logs are not distinguishable from ordinary satin-wood till sawn, and twenty or forty may be cut without one of any beauty being found. The feathered satin-wood seems very liable to sever when dry and old. Articles of satin-wood get darker and lose much of their beauty by age, unless protected by a coat of fine varnish. A cubic foot weighs 55 to 57 lbs. It is used for axletrees, oil-presses, posts, bed-posts, rafters, and the handles of axes; and in the Madras Gun Carriage Manufactory, for naves of wheels, also for fuses. The wood is excellent for agricultural implements, internal decoration and furniture, brushes and turnery.—*Drs. Roxb.* ii. 400, *Gibson, Wight, Cleg-hörn; Mr. Rohde; Mr. Mendis; Hartwig; Thw.*

CHO, or **Chor**, are vast and continually encroaching beds of sand left by the torrents that rush down from the low hills of the Siwalik range. The rapid increase of the area thrown out of cultivation by

being covered with barren sand, has been a source of continual trouble and anxiety to the revenue officers of the district; and the increase of the sand area is being continually accelerated by the destruction of forests on the outer hills. These hills are composed chiefly of an exceedingly soft sandstone. When once its surface is laid bare by the destruction of the grass and brushwood that once covered the hills, it is very readily swept away by the heavy rainfall. The vertically falling rain at once penetrates it, down almost to the level of the plain, and excavates a narrow gorge with perpendicular sides extending far into the hills, but with the bed of the stream sloping very gently until it terminates in a vertical wall at the upper end. The rush of the water over this precipice, every time a shower falls, disintegrates a quantity of the rock, and helps to extend the area of loose sand on the plain below. The sandstone in its natural state is not unfertile; it is easily penetrated by the roots of plants, and contains a considerable admixture of lime and clay. Moreover, patches of ancient forest are still occasionally to be found on the hills.

CHO. HIND. *Pyrus malus*.

CHOAR KULLI MARAM. TAM. *Soyimda febrifuga*? yields clear, transparent gum, slightly tinged with red, and with a slight dash of bitter in the taste.

CHOASPES, the ancient name of the river on which Susa, in Khuzistan, was built. It is the modern Kerah river, near which are the ruins of Susa.—*Williams' Essays*, p. 13.

CHOB. HIND. A stick, a pole, timber, a mace. Chob-dar, a mace-bearer. The chob or mace is made of silver, ivory, or wood. It is probable that the office of gold stick, adopted in the British Court, was borrowed from the East. Most men of rank in India—Hindu, Mahomedan, or British—retain this class of attendants, mostly, however, bearing a silver baton, but having the common name of chob-dar, or staff-bearer. The chob or baton is about five feet long, with a head, and as thick at the upper end as one's wrist, or as a constable's staff.

CHOB, a strong fibre of Chutia Nagpur, made into ropes.

CHOBBA, a dish of polao, mixed with slices of coconuts, dates, and almonds.

CHOB-CHINI. HIND. *Smilax China*, China root.

CHOB-i-PAU. PERS. *Fothergilla involucrata*.

CHOB-KUT. HIND. *Costus root*.

CHOBS. —? *Campanula edulis*.

CHOCHENA. URIA? A tall tree of Ganjam and Gumsur. The bark is used medicinally in fever, and the milk is given to children in a wasting disease there, called 'dubli.'—*Captain Macdonald*.

CHIOCHHI. HIND.? A tree of Chutia Nagpur, yielding a harsh, reddish-grey timber.—*Cal. Cat. Ex.* 1862.

CHOCOLATE, a nutritious article of diet manufactured from the nuts of the *Theobroma cacao* and *T. bicolor*. It reaches India in the various forms of chocolate nibs, flake chocolate, soluble chocolate, and flake cocoa. *T. cacao* is now seen to a small extent in the S. of the Peninsula of India, and in British Burma, but is grown chiefly in Trinidad, Guiana, and Brazil. The husk contains a number of the seeds, very closely packed in a little pulp. These, after being dried,

roasted, and ground, constitute cocoa; if merely broken up after roasting, cocoa nibs; mixed with starch and very finely ground, soluble cocoa of the shops. Chocolate consists of the same, made up into a paste, and flavoured. In 1870 nearly 15,000,000 of pounds of cocoa were imported into Great Britain, more than 6,000,000 being entered for home consumption.—*M'Culloch*.

CHODA of Hazara, *Pyrus baccata*, crab apple.

CHOD-TEN, in Tibetan, is the chaitya of the Sanskrit, a Buddhist monument numerous in Tibet, dedicated to the celestial Buddha.

CHOERADODIS, a genus of *Mantodea* common to India and tropical America.

CHOTOCARPUS CASTANOCARPUS, *R.*, is *Adelia castanicaarpa*, *Roxb.*; *Ch. pubescens*, *Thur.* A tree of Ceylon, variable in size, common in the Ratnapura and Ambagamowa districts; also found in Sylhet, Khassya, Burma, etc. The timber is very hard, and in use for building purposes. *Chotocarpus coriaceus*, *Thur.*, is a moderate-sized Ceylon tree, common.—*Beddome, Fl. Sylh.* p. 284; *Thwaites*.

CHOGA, a loose cloak worn by the Afghans, not unlike the dressing-gown of European nations. It is made of a fabric woven of camel's hair or of the fine wool of the rufus sheep, or of that which grows at the roots of the hair of the goats in the northern parts of Afghanistan. That of camel's hair cloth costs up to £20; it is called Shutri choga. From Barrak, the cloth made from the rufus-woolled sheep, is made the Barraki choga. Kurk cloth, made from the wool of the highland goat, is used for the Kurki choga. Kurk resembles the pashmina or woollen cloth of Kashmir, but is of denser texture. They are made chiefly near Herat and in the Hazara country. Those of Kashmir are famous. A choga of British broadcloth, lined with the fur of the sambar deer, costs £60 to £80; but the fur of the ermine, squirrel, and fox are also used.—*MacGregor*, p. 50.

CHOGOD. HIND. Au owl; also pronounced chuhat.

CHOGU. HIND. *Taxus baccata*.

CHOHAN or Chahaman, one of the four Agnicula tribes, which formed a dynasty that reigned at Ajmir and Delhi, and afterwards at Kotah and Bundi. Ajipala, one of this dynasty, founded Ajmir in A.D. 145; and it was afterwards lost to the Mahomedans by Dola Rai. Harihara Rai defeated Sabaktagin. The race has been conspicuous for bravery during two thousand years. The leading individuals have been—

Anhul or Agnipala, 'offspring of fire,' the first Chohan; probable period 650 before Vikrama, when an invasion of the Turshka took place; established Macavati nagri (Gurra Mundilla); conquered the Konkan, Aser, Golconda.

Suvatcha Mallan. In all probability this is the patriarch of the Mallani tribe.

Gulun Soor; Ajipala, 'Chukwa,' or universal potentate; founder of Ajmir, some authorities say in 202 of the Vikrama, others of the Virat-Samvat. The latter is the more probable.

Dola Rai, slain, and lost Ajmir on the first irruption of the Mahomedans, S. 741, A.D. 685.

Manika Rai, S. 741, founded Saubhur; hence the title of Sambri-Rao borne by the Chohan princes, his issue.

Hursraj, S. 827, defeated Nazir-oo-din (qu. Subaktagin), thence styled 'Sultangruha.'

Beer Beelundoo or Dharmaguj, slain defending Ajmir against Mahmud of Ghazni.

Beesuldeo (classically Visaladeva); his period, from various inscriptions, S. 1066 to 1130.

Anah, constructed the Anah Sagar, Ajmir; still bears his name.

After Anah were Jeipal, Ajeydeo or Anundeo, and Someswar. Someswar married Rooka Bae, daughter of Anung Pal Tuar, king of Dehli, and their son Prithi-raj succeeded to the throne of Dehli, and is said to have been slain by Shahab-ud-din S. 1249, A.D. 1193. His son Rainasi also fell. Vijaya raj, son of Someswar, whose name is on the Dehli pillar, was a nephew of Prithi-raj, and was adopted as his successor. His son Lakunsi had twenty-one sons, seven of whom were legitimate, the others illegitimate, and founders of mixed tribes. From Lakunsi there are twenty-six generations to Nonud Singh, a late chieftain of Neemana, the nearest lineal descendant of Ajipal and Prithi-raj. The genealogical tree of the Chohan tribe exhibits thirty-nine princes, from Anhul, the first created Chohan, to Prithi-raj, the last of the Hindu emperors of India. Mahomedan historians say that Prithi-raj was killed at the battle of the Cuggur, or shortly afterwards; but Chand, or rather his continuator, represents him as dying in captivity at Ghazni, and the bard would gladly have concealed so humiliating a fact if he could. Several Chohan sepoys, after the capture of that fortress, sought out and professed to find the Ch'hatri of their ancestor, where they showed their devotion to his memory, by presenting their humble offerings in honour of the champion of their faith. The desert tribes in the Chohan territory, the Sahrai, Khosa, Koli, Bhil, were till lately predatory. The western Chohan are said to be free from infanticide. They do not wear the zonar, nor form a circle (choki) in cooking, and their cooks are usually of the barber caste. The Chohan and Gehlot were neighbours, and on friendly terms, but the Rahtor and Tuar were often at war, though only separated by the Kali naddi. The Chohan territory on the S.E. has Koliwara, on the W. the desert Dhat, on the S. the Rin. It has two divisions,—Vira Bah on the E., and across the Looni on the W. is Parkar, the Naggur Parkar of the maps. Bundi and Kotah are the most celebrated of the existing Chohan. Twelve branches of the Chohan became Mahomedans.—*Prinsep's Antiquities by Thomas*, p. 248; *Tod's Rajast.*; *Elliot, Supp. Gloss.*

CHOHAR or Choar, a tribe of mountaineers in the hills of Ramgarh, etc.—*Wilson*.

CHOI, also Jira. HIND. A hole in the bed of a river, to get water; the outer leaf or spathe of the sugar-cane.—*Elliot*.

CHOIGYAL. TIB. Dharmaraja, the judge of the dead. Shin-je, TIB., is also said to have the same meaning.

CHOIL. PANJABI of Cis-Sutlej. Low, swampy, undrained land.

CHOITRO, a Hindu month corresponding to the latter half of the month of March and first half of April. The full moon of Choitro, therefore, corresponds with the full moon of Easter. It was in this month that the devotees formerly engaged in the ceremonies of the Charakh puja, the swinging sacrifice.

CHOK. HIND. Gmelina arborea.

CHOKA. HIND. Rumex vesicatoria.

CHOKA. DUKH. Piper nigrum.

CHOKHA, the root of a plant that is brought from Dehli to Ajmir. It is heating, taken internally as a narcotic; is bitter. It is chiefly used, mixed with sulphur and oil, to cure the itch in camels.—*Gen. Med. Top.* p. 131.

CHOKI. HIND. Custom-house. A circle drawn round the spot on which Hindus cook their food. The interior area is holy. No stranger must step within or over it; with the Sri Vaishna of the Ramanuja followers, no strange eye must look on it. Such occurring, the food is thrown away, no matter how long the abstinence had been.

CHOKIDAR, in India, a watchman, a policeman. The Chokidar or Ich Agasi of the Pashalic of Baghdad is one of the pages of the pasha's presence.—*Mignan's Travels*.

CHOKLU. HIND. Rhus succedanea.

CHOL. TURK. Desert.

CHOLA, an ancient dynasty in the south of the Peninsula of India; the Sorai of Ptolemy. Their several capitals were Arcot, Conjeveram, then Wariur, near Trichinopoly, Combaconum, Gongadaram, and lastly Tanjore. At the beginning of the Christian era they seem to have been ruling over all the countries speaking the Tamil language; and Mr. Ellis was of opinion that in the 8th century its princes were occupying large portions of Karnata and Telingana, and ruling over as much of the country up to the Godavery as lay east of the hills at Nundidrug. They seem to have been first checked in the 12th century, and ultimately driven back within their ancient frontiers. In this state they continued to subsist either as independent princes or feudatories of Vijayanagar until the end of the 17th century, when a brother of Sivaji, the founder of the Mahratta state, who was at that time an officer of the Adal Shahi government of Bijapur, being detached to aid the last Chola raja, supplanted him in his government, and was the first ruler of the Mahratta government of Tanjore. The capital of the Chola for the most part was at Kanchi or Conjeveram. They must have been exercising sovereignty in the time of Ptolemy, who makes mention of 'Arcati soren'; and in the Mahawanso frequent references to transactions with the Chola occur during the earliest periods of the Singhalese annals. The Tamil traditions abound with stories of Adonda Chakravarti, who appears to have been the subduer of the aboriginal or Curumber tribes; yet no trustworthy records of his origin and actions are forthcoming, neither have authentic accounts of the overthrow and extinction of any of the great southern states been yet obtained. The Chola kingdom at one time reached as far as the river Kistna. The Ceded Districts formed part originally of the kingdom of the Chola, with whom they were occasionally disputed by the Kalyan Chalukya; and ultimately they constituted the principal portion of the kingdom of Bijanagar or Anegundi. The capitals of the latter power were successively Bijanagar on the Tumbudra, Penaconda, and Chandragiri.—*Elphinstone*.

CHOLA-MANDALLOOR, supposed to be the source of the term Coromandel, applied to the east coast of the Peninsula of India, the Carnatic below the ghats. It was the country of the rajahs of the

Chola dynasty Choran, who seem to have been coeval with the Chera and Pandyan dynasties.

CHOLAY of Nepal, *Capra hircus*, Linn.

CHOLERA, also called *Cholera morbus*, a disease which has been reappearing at intervals in British India, certainly since the latter part of the 17th century. In its attacks only one in two or three recovers. It has spread to most countries, and seemingly has Lower Bengal as an abiding place. Cholera reappeared at Negapatam in October 1781. A third time it appeared in 1786, and a fourth time in 1817. It appeared amongst the native troops, who marched from Bengal 5000 strong in February 1781, and they arrived near Madras in August, reduced to little more than 2000. It broke out near Ganjam in March 1781, and lasted about six weeks.—*Hough*, p. 115.

CHOILI. HIND. A bodice worn by most of the women of British India. It is of various shapes, but generally of coloured materials; in Sind, under the shift, of cloth called kanjari, the choli or gaj conceals the bosom. When it passes round the side like a bodice, and is fastened behind, its name is puth. The Marwari and Brinjari women have the latter form. In Sind, over the choli or angia bodice is a light muslin shirt, which continues below the waist, called a koortni; and over all a scarf of white or coloured muslin of fine texture, do-patta, passed once round the waist, and thence across the bosom and over the left shoulder and head, like the sari, completes the costume.—*Watson*; *Burton's Scinde*, p. 301.

CHOLI. DUKH. *Portulaca quadrifida*, R.

CHOLLA. TEL. Eleusine coracana, *Gertn.*

CHOLUM. TAM. Sorghum vulgare.

CHOMONDRI or Chālembry. TAM. A Ceylon tree; wood of a very dark colour, and durable. It grows to between 12 and 20 inches in diameter, and 20 feet in height. It is used by the native carpenters for general purposes. It produces a fruit which is used as medicine.—*Edye, Ceylon*.

CHOMORERI LAKE, according to Major Cunningham, is slightly saline. It has evidently had an outlet at its southern extremity, where it is only separated from the valley of the Parang river by a very low range of hills. The outlet of the little salt lake of Thogji has evidently been near its north end; and its waters, previous to the change in the state of the country which interrupted their exit, in all probability flowed into that tributary of the Zaskar river which runs to the eastward of the Lachalang pass. A goddess, Mo, is said to have haunted this lake Chu, and while flitting over it used to call out incessantly, 'Ree, Ree!' thence Choo-mo-ree-ree! It is on the lofty platform of Rupchu, which extends from the Parang pass across the main chain of the Himalaya to the adjacent head of the Zaskar valley. The lake is 15,200 feet above the level of the sea.—*Mrs. Hervey's Adventures*, i. p. 148; *Hooker and Thomson*.

CHOMPENG. MALAY. A river cargo boat. The prahu boat, called Sekong, is made of one log of wood, very sharp fore and aft, with long outriggers to prevent it upsetting.—*J. I. Arch*.

CHONDROPTERYGII, a sub-class of fishes. The skeleton is cartilaginous, and skull without sutures; body with medial and paired fins, the hinder pair abdominal; caudal fin with produced upper lobe. Gills attached to the skin by the outer margin with several intervening gill-open-

ings; rarely one gill-opening only. No air-bladder: Embryo with deciduous external gills; males with prehensile organs attached to the ventral fins. In the family Carcharidæ the eye has a nictitating membrane, and the mouth is crescent-shaped and inferior. The families Amnidæ, Rhinodontidæ, Notidanidæ, Scylliidæ, and Priistophoridæ, have no nictitating membrane. In the saw-fish family Priistidæ, the snout is produced into an exceedingly long flat lamina, armed like a saw with a series of strong teeth along each edge. The electric organ of the family Torpedinidæ is composed of vertical hexagonal tubes between the pectoral fins and the head. The ray family, the Rajidæ, have a broad rhombic disc, generally with asperities or spines, and the pectorals extend to the snout. The pectorals of the Trygonidæ are similarly prolonged, and they have a long and slender tail. The pectoral fins of the Myliobatidæ are greatly developed; they leave the head free, and reappear at the extremity of the snout as a pair of detached (cephalic) fins.—*Gunther, Catal. of Fishes*.

CHONDRUS CRISPUS. Carrageen moss.

CHONEMORPHA MACROPHYLLA, one of the Apocynaceæ. It takes its name from Chone, a funnel, and Morpha, form. A very handsome climbing shrub, with large white flowers, well adapted for a screen or covering a wall.—*Riddell*.

CHONEMORPHA MALABARICA. Don.

Echites Malabarica, *Lam.* | Pul-valli, . . MALEAL. A Malabar plant. Its leaves, rubbed up in rice water, are applied to carbuncles; and its root is used in fever, with dried ginger and coriander seed.—*Useful Plants*.

CHONG, an infusion or fermented liquor, made by the Lhopa of Bhutan, from wheat, barley, or rice, which is boiled and strained. Afterwards, one ball, size of a nutmeg, to each pound of grain, of the blossom of the *Cacalia saracenica* (Bakka), is crumbled and strewed over the grain. It is then pressed in baskets lined with leaves. To use it, a portion of the digested mass is put into a vessel, boiling water poured over it, and infused. It is now the Chong, and it is a grateful beverage, slightly acid, and not powerfully alcoholic.

CHONG, a hill tribe on the side of the Mei-kong basin, but towards the sea, between lat. 11° and 12° N. They preserve more of the Australo-Tamulian character than any of the neighbouring tribes. Their hair, instead of being stiff or harsh, as in the Mongolian, Tibetan, and prevalent ultra-Indian and Malaya-Polynesian race, is comparatively soft; the features are much more prominent, and the beard is fuller. The Moi or Ka-moi, who, on the opposite side of the Mei-kong, occupy the broad expansion of the Annam chain towards Kamboja, and appear to extend northwards along these mountains, marching with the Lau on the westward, are said to be black savages, with Negro features. The Kambojans style them Khamen. They are the Kho-men of Leyden, and the Kha-men of Gutzlaff.

CHONG-MON-GO. HIND. *Nepeta floccosa*.

CHONTI. HIND. Amongst Hindus, a tuft of hair left unshaven on the top of the head. It is also called Choti, also Chonda and Chuda. Mahomedan boys sometimes retain it, as a votive offering to some saint. All Mahomedan women of the Peninsula dress their hair with the chonti, or tail, hanging behind, and largely added to by

their hair that has been combed out. Tufts of hair are left on children's heads unshaved, dedicated to saints. See Chuda-Karanam.

CHOOA, HIND.; also Battoo, also Marsa. *Amarantus oleraceus*, *Elliot*.

CHOOA, an oil of Cuttack, distilled from the jhoona resin, a few fragrant substances, as sandalwood and khus-khus, being mixed with the compound. It is used as an unguent in cutaneous diseases. The best sort sells at 5 lbs. weight per shilling.—*Local Committee, Cuttack*.

CHOOARA. From Chooara to Sungla of Tookpa, three passes cross the top of the Himalaya range in Kunawar—Neebrung 16,035 feet, Goonas 16,026 feet; Goosool, 15,851 feet, all crossing the top within half a mile of each other.

CHOOBOO, a hybrid between the yak and the Indian cow.

CHOO-FOO-TSZE, the Coryphæus of Chinese philosophy; one of China's greatest writers, the most prominent of all the authors of the middle age period in that country. Until recently he was considered as almost a second Confucius.—*Dr. Edkins*.

CHOOHA. DEKH. The rat; *Mus decumanus*. CHOOKEH, also Chooko - Palung. BENG. *Rumex vesicarius*; sorrel.

CHOOKRA, the lowest class of village servants, the Kummalu, Bhungee, Hulal khor, and Khukrob. The head of the race is called Mihtar (Persian, a prince), and his perquisites are Mih-tarai.—*Elliot*.

CHOOKUL or Choput. HIND. A leaf cloak in general use amongst the natives in Manbhum during wet weather.

CHOOA, a tribe of Tuga in Baghput, so called from having come from Chooloo or Chooro in Bikanir.—*Elliot*.

CHOOAEE. HIND. This name is indifferently given to *Spinacia tetrandra* and *Amarantus polygamus*. The former is a common sort of native greens, and when boiled resembles spinach; it is procurable nearly all the year round. The latter is much cultivated by the natives. It is sown broadcast in beds from June to March. The leaves are sold in the bazar at one pice the seer. Used as greens and also in curries.—*Riddell*.

CHOOI. HIND. A whirlpool; also stones rounded by attrition in running water, called Rori and Binlung. They are used by Saiva Hindus as the lingam emblem of Siva. See Rohri; Chuli.

CHOOI. BENG., HIND. *Villarsia Indica*.

CHOOMLI KOL, a branch of the Kol race, also called Mullar and Panburri. This branch is respectable, and is employed in every Dekhan village as a member of the third division of the Balottah, and supplies water to travellers, wearing on his head the choomli or twisted cloth, on which to rest the pot; hence the name.

CHOONA. HIND. Quicklime, mortar; in Tamil, Chunam or Chunambo.

CHOONCHA. BENG. Country sorrel.

CHOONDUREE. Once a year, on a festival day, amongst Hindus, sons visit and pay adoration to their fathers. The diet that day is chiefly of vegetables and fruits. Brahmans, with their unmarried daughters, are feasted, and receive garments called choonduree from their chiefs.

CHOONEA. A Kafir tribe. See Kafiristan.

CHOONGGAY. HIND. Fried cakes made of wheat flour, sugar, and ghi.

CHOONGUL. HIND. Also Khonch. A handful of anything.—*Elliot*.

CHOONJERMA, a pass in Nepal, in lat. 27° 33' N., long. 88° 1' E.; crest, 16,000 feet; temperature, 24° at 5 P.M.

CHOON-KHURKEE. BENG. *Apluda aristata*.

CHOOFREE ALOO. HIND. *Dioscorea globosa*. Tubers roundish, very large, white inside, and much esteemed; the skin thin and smooth like a potato. The stems require strong sticks to creep over. It bears a large roundish fruit, like an oak-apple in appearance, which is also edible. The words seem to be correctly Safri-alu.—*Riddell*.

CHOOA and Thaori were, in Colonel Tod's time, in Rajputana castes of robbers,—the former from the Lakhi jungle, the latter from Mewar. Most of the chieftains had a few in their pay, entertained for the most desperate services. The Bahaderan chief had expelled all his Rajputs, and retained only Choor and Thaori. The Choor were highly esteemed for fidelity, and the barriers and portals throughout this tract were in their custody. They enjoy a very singular perquisite, which would go far to prove their being the aborigines of the country, namely, a fee of four copper coins on every dead subject, when the funeral ceremonies are over.—*Campbell*.

CHOOA-KARANA. SANSK. From Choor, the bunch of hair on the crown of the head, and Kree, to do. See Chonti.

CHOOA-KAI. TAM. Calabash.

CHOOKEAN. HIND. Bracelets worn by fakirs.

CHOOORWAY. HIND. A dish prepared from parched rice.

CHOO - TAI - TSOO, founder of the Ming dynasty.

CHOOTA-PUSHPA. BENG. *Melastoma aspera*.

CHOOTRA-PHUL, a Nepal tree, not unlike the barberry; the wood is of a strong yellow colour, but does not afford a permanent dye. Nepal women use it instead of sandal for tracing the tilak on their forehead.—*Smith's Nepal*.

CHOP. CHIN. A brand, a stamp, a seal.

CHOPADA. SUM.? *Artocarpus integrifolia*.

CHOPANDIGA. HIND. *Achillia millefolium*.

CHOPAR. HIND. Hiptage madablota.

CHOPAT. HIND.? Part of the potter's wheel.

CHOPRA. HIND. *Adelia serrata*.

CHOPRA, a tribe of the Barajati class of the Khatri. See Khatri.

CHOPUT. HIND. Chess-cloth.

CHOR, a mountain 25 miles S.E. of Simla. It rises to a height of 11,982 feet above the sea.

CHOR. HIND. *Coriaria Nepalensis*.

CHOR or Chur. HIND. A sandbank or island in a river bed.—*IV*.

CHORA, in Kaghan, *Quercus dilatata*, *Q. ilex*; in the Simla hills, *Angelica Archangelica*.

CHORA. GUA. *Dolichos catianus*.

CHORAIL. — ? An evil spirit.

CHORASMA or Khwarizm, the country on the east of the Caspian Sea, the capital of which was Gurgan]. The Arabs wrote the name of the country Jurjan, and that of the capital Jurjaniya. The Mongol form of the name was Organj. Nosh-tigin, a Turkish slave of Malik-Shah Saljuk, was made governor of the province, and contrived to secure his independence. His son, Kutb-u-din, extended his dominions, and acquired the title of Khwarizm-Shah, a name which had been borne

by the rulers of the country before the Mahomedan sway. This empire of the Khwarizm kings rose upon the ruins of the Saljuk dynasty, and their territories extended from Azarbaijan and the Caspian Sea to the Indus, and from the Persian Gulf to above the Jihun or Jaxartes. A succession of nine princes reigned for 138 years, from 491 to 628 Hijira (1097 to 1230 A.D.); but in 618 H., the last of them, Jalal-ud-din Mankburni, was driven by Chengiz Khan beyond the Indus, and he was killed in Mesopotamia ten years afterwards, stripped of all his dominions.

CHORBAT. This district is a dependency of the government of Iskardo, which, like that of Leh, is subject to that of Kashmir. The desert country by which Nubra and Chorbat are separated, has for the present acted as a barrier to the further extension eastward of the Mahomedan religion, which is now universally that of the people of the whole of the Iskardo (or Balti) district, as well as of Dras. On the Indus and in the valleys south of it there is no uninhabited tract between the two, so that the Mahomedan and Buddhist population are in direct contact. The result is that Mahomedanism is in that part gradually, though very slowly, extending to the eastward.—*Dr. Thomson's Travels in Western Himalaya and Tibet*, p. 204; *Tibet*. See Maryul.

CHOR-CHITTI. HIND. Deed of relinquishment.

CHOR-DEO, an evil spirit; literally, thievish god.

CHOR-GANGA in A.D. 1131 invaded Orissa, and established the Ganga Vansa dynasty, which lasted till A.D. 1451. See Chur-Ganga; Orissa.

CHOR - HULDEE, a Mahomedan ceremony so called.

CHORI AJWAIN. DUKH. Seeds of *Cleome viscosa*.

CHOR-KANTA. BENG. *Andropogon acicularis*. Spear-grass.

CHOR-KONDA, a glacier in Balti, in lat. 35° 36' N., and long. 75° 58' E., and 16,900 feet above the sea.

CHOR-KULLI. HIND. *Soymida febrifuga*.

CHORO-CADAMBOO? TAM. A Travancore wood of a yellow colour, specific gravity 0.529; used for packing-cases.

CHOROLI KI BHAIJI. DUK. *Portulaca quadrifida*.

CHOR PATTA or Surat, *Urtica crenulata*, a gigantic stinging nettle, a native of the hills and valleys on the east of Bengal, Luckipore, Pandua hills, and Assam. It affords a fine white fibre, but of no great strength, and not durable. The hill tribes fabricate it into coarse cloths.—*Royle*.

CHOR-SACI, a term by which the Scythians designated the ancient Persians. See Kurmsaq.

CHORTEN, in Hinduism, a pile dedicated to the five elements. It seems to be the Buddhist chod'ten, or relic receptacle.

CHOR-UTAR, in Mewar, a grant of land by the sovereign, resumable at pleasure.

CHOSA. SANSK. *Papaver somniferum*; poppy.

CHOSROES, in Persian, Khusr, Kasru, or Kasra. Two Persian kings of this name of the dynasty of the Arsacids. Chosroes I., styled Nushirwan, A.D. 531 to 571, was defeated on the plain of Melitene by Justinian, the general of Tiberius Constantine. Amongst the plunder obtained was his drinking-cup, of gold and paste jewels, which

is now in the Bibliothèque Impériale of Paris. He was succeeded by Hormuzd. Chosroes II., or Khusr, Parvez, A.D. 591, reigned till A.D. 623, when he was put to death by Kobad. He was grandson of Chosroes I. He married a daughter of the emperor Maurice, and this lady is generally supposed to be the heroine of the eastern romances Khoosroo and Shireen, and Farhad and Shireen. Near Baghdad is an arch, known as the Tak-i-Kasru, or arch of Chosroes, which marks the site of the ancient Ctesiphon.—*Mordtmann*; *Smith*; *Prinsep by Thomas*. See Greeks of Asia; Kasr.

CHOT, also Ghoonghi. HIND. A blanket, cumbl, or sheet, folded or tied at one end to form a cloak.—*Elliot*.

CHOTA. HIND. *Pyrus Kumaonensis*.

CHOTA. HIND. Small, little; Choti, fem.; and Ch'oto or Choto, BENGALI; hence,—

Chota-bish-tarik, *Ipomoea speciosa*.

Chota-chand, *Ophiocylon serpentinum*.

Chota-chirayta, *Cicendia hyssopifolia*.

Chota-dhaon? *Grislea tomentosa*.

Chota-gul-khaira. See Khabaji.

Chota-jam, *Eugenia caryophyllifolia*.

Chota-karoonda, *Carissa spinarum*.

Chota-koksun, *Vernonia cinerea*.

Chota-kanoor, *Aloe litoralis*.

Chota-okra, *Zapania nodiflora*.

Chota-pind-ulu, *Dioscorea aculeata*.

Chota-sundhi, *Nymphaea edulis*.

Choti-al, *Rheum emodi*.

Choti, *Corchorus olitorius*.

Choti-sim-ki-phalli, *Dolichos lablab*, native bean.

This is a smaller species of the D. lablab; the legume and seeds are both eaten; it is sown in the rains, and sells from one or two pice a seer.

Choti-ilachi, *Elettaria cardamomum*.

Choti-mai, galls of *Tamarix orientalis*.

Choto-phutika, *Osbeckia aspera*.

Chota-akunda, *Calotropis herbacea*.

Chota-al-ki-pat, *Morinda umbellata* leaves.

CHOTA NAGPORE, properly Chutia Nagpur, is the country on the eastern part of the extensive plateau of Central India, on which the Koel, the Subunreka, the Damuda, and other rivers have their sources. It extends into Sirguja, and forms what is called the 'Upar - ghat' or highland of Jaspur, and it is connected by a continuous chain of hills with the Vindhyan and Kynor ranges, from which flow affluents of the Ganges; and with the highlands of Amarkantak, on which are the sources of the Nerbadda. The plateau has an area of about 7000 sq. miles. It is on all sides difficult of access. It is a well wooded, undulating country, diversified by ranges of hills, and has a genial climate. The population at the 1872 census was 3,825,571, and is formed of a number of non-Aryan tribes who had fallen back to that refuge from the plains, more than half of them being of the race known to Europeans as Kol. On the south-west frontier of Bengal, besides Chutia Nagpur, are Sirguja, with Palemow, Ramgurb, Hazaribagh, Mynpat, and Amarkantak. The elevation of Chutia Nagpur is 2000 to 3000 feet, with hills running E. and W., but of little height; Sirguja is mountainous, rising 600 to 700 feet above the level of Chutia Nagpur. Mynpat is a table-land about 30 miles S.E. from Sirguja town, and about 3000 or 3500 feet high. Palemow district is very mountainous. Hazaribagh town, lat. 24° N., long. 85° 54' E., is 1750 feet. Slope of the country is south towards Sumbulpore; N. and E. parts of district very mountainous, but level and even depressed towards the Mahanadi.

Sumbulpore town, only 400 feet. Orissa table-land then rises on the southern side of Mahanadi, in some places to 1700 feet, backed by the chain of E. Ghats. Amarkantak jungle table-land, lat. $22^{\circ} 40' N.$, long. $81^{\circ} 5' E.$, 3500 feet. The soil in the plains is generally fertile, producing abundant crops of wheat, barley, rice, pulse, excellent vegetables, cotton, and sugar-cane. The cultivated parts are overrun with a coarse grass.

There are 21 mahals, which form the S.W. frontier of the Bengal province, and which may be classified in four groups, the Sumbulpore, Patna, and Sirguja groups, and Singbhum.

The Sumbulpore and Patna groups are in the circle of the Cuttack Tributary Mahals. Singbhum was never Mahratta; and in 1857 its chief, the raja of Poorahat, joined in the rebellion, many of the Larka Kol following him. A Christian mission went to Chutia Nagpur in 1845, and has made much progress amongst the Dhangar race. In Chutia Nagpur, in which are the districts of Manbhum and Singbhum, the mortality from the famine of 1866 fell on the population about the same as in Orissa. More than half of the population are aborigines or semi-Hinduized. The fourteen Kolarian tribes being the Asur, Bhumij, Birhor, Ho, Kharria, Kora, Korwa, Muasi, Mundah, and Santal, who speak the Mundah, or a language closely allied; with the Cheru, Kharwar, Kisan, and Saont, who have lost their own primitive speech. The Dravidian tribes are the Bhuier, Binjhia, Gond, Khand, Kaur, Mal, Oraon, Rautia, Sahar, and many others. The census of 1872 showed as under:—

Asur, K.,	2,567	Ho or Kol,	292,036
Bhuier.		Tunaria,	3,016
Boyar.		Korwa,	17,564
Bhumij,	128,287	Kur, Kurku or	
Binjhia.		Koraku,	2,458
Birhor,	393	Muasi.	
Cheru, Cherwa,	17,632	Mal.	
Gond,	65,069	Naiya or Naik,	2,324
Kaur,	27,508	Kisan, Nagewar or	
Kharria,	26,393	Nakcia,	22,934
Santal,	220,096	Oraon or Dhangar,	208,343
Bhuiya,	184,089	Pakaria,	511
Chik (weavers),	19,585	Rautia,	24,633
Ghadi (scavengers),	32,258	Bhar; Raj Bhar,	17,091
Khaira,	11,804	Ghatwal,	31,366
Kharwar,	137,055	Mahali,	20,285
Kolitan.		Sukiar,	8,980
Panda,	5,478	Kurni,	250,000?
Surak,	9,986	Koeri,	53,638
Christians,	14,226	Kora,	11,505
Mahomedans,	169,000	Kewat,	2,660

The Asur or Agaria are wild, uncivilised iron-smelters. The Bhuier and Boyar are supposed to be the same tribe, to be identical with the Parheya, and allied to the Gond. They are also called Beoriha, from practising the kumari or jhum form of cultivation.

The Bhumij (128,287) are in Dhalbum, Manbhum, and Orissa, and, under the name of Chuar, were formerly known for their daring exploits.

The Birhor, a very small tribe, who claim alliance with the Kharwar. They used to practise cannibalism; a Birhor whose end was approaching, would invite his relatives to come and feast on his body.

The Kaur claim descent from the Kaurava race.

The Korwa are a very wild tribe of Kol, but agricultural.

The Oraon, and those of the Oraon tribe called Dhangar, are a merry, light-hearted people, very

fond of dancing, but given to excess in eating and drinking.

The Santal are most numerous in Manbhum, Singbhum, and Chutia Nagpur.

The Bhumij form the majority of the population in all the estates of the Manbhum district to the south of the Kassai river. As they approach the confines of Chutia Nagpur, they appear to be called indifferently Mundah or Bhumij, and they intermarry. More to the east, the Bhumij have greatly assimilated to the Bengali; many have acquired estates and influence as Sirdar Ghatwali, the hereditary guardians of the passes. They tenaciously cling to their national songs and dances. Bhumij are to be found in Mohurbunj and Keonjur, and it is this branch of the Mundah race which has spread farthest in an eastern direction. The Bhumij of the lower part of Singbhum and Manbhum are tolerably civilised. All the wild tribes of Central India worship relatives immediately after death; and the Bhunjia, Bhumij, and Kol tribes or clans practise the ceremony whereby the soul of a man just deceased is attracted or conjured into some tangible thing, which is brought back into the house soon after the funeral, apparently that the soul may thenceforth be worshipped as a household spirit. Traces of this superstition may be found all the world over. It is practised by Hindus; Herodotus and Homer show its antiquity. Captain Burton mentions it in Africa.—*Cent. Ind. Prov. Com. Rep.* pp. 5-9; *Dalton*, pp. 147-156; *Campbell*, p. 33; *Aitcheson*; *B. As. Soc. Jo.* 1866; *Bengal Census Report*.

CHOTA SUR. HIND. *Porculia salvania*.

CHOTI-PHUL of Shahpur, a flat, shield-like ornament worn on the top of the head by Arora women. It is also in the form of a round spherical boss, different in form from the ornament of the same name in the Jach Doab.

CHOTRA. HIND. *Berberis aristata*.

CHOU. HIND. Four; softened from Char, four, from which are many compound words.

CHOUBE or Choubay, a class of Brahmans who originally received their name from reading the four (chou) Vedas, as Doobe was derived from reading two, and Tribedee from reading three, of the Vedas. Choube are numerous in Muttra, where they claim the exclusive right of worshipping in the temples of Krishna. They are of large physical frame; and the Choubni women have a commanding style of beauty.

CHOUBEESA, from Choubees, 24, is a term applied to a tract of country containing that number of villages in the occupation of a particular tribe. There are several of them scattered over the provinces, but they may perhaps be more frequent in the neighbourhood of Muttra than elsewhere.

CHOUDHARI, an overseer, commonly written Chowdri. In Hindustan the choudhari is the revenue officer of a district, called desmukh or desai among the Mahrattas. He is also a head of a division, or sect, or gang. In many Hindu cities, the different classes of the community of every rank still acknowledge certain of their members as their hereditary headmen or provosts. These are the Sartavaha of the Brahmans, and Sirdar of the Mahomedans. The chowdrani is usually a woman overseer. Many of the Hindu temples of the south of India are pyramidal,

but in successive tiers, four-cornered, each tier or platform being upheld by two men at the corner; these are the choudhari, though in reality there are eight for each tier.—*Wilson, Hind. Th.*

CHOU DWAN, a tract of country in the district of Dehra-i-Ismail Khan.

CHOUGH, the Cornish chough, *Fregilus graculus*, inhabits the more elevated regions of the Himalaya, and of all high middle Asia, also stated to have been obtained in the vicinity of Calcutta.—*Cal. Rev.*

CHOUGHAN, in Rajputana, the Rajput champ-de-Mars. See Dard.

CHOUK. HIND. A market-place. Chouki, a custom-house, a police station. Choukidar, a policeman.—*Elliot; Wilson.* See Choki.

CHOUKA. HIND. *Tetraceros quadricornis*.

CHOUKANDI, or Luri-ka-kodan, so called from the leap from its top of an Ahir, by the name of Luri. It is in the town of Sarnath, and is a lofty mound of solid brickwork, surmounted with an octagonal building. Hiwen Thsang describes this tower to have been no less than 300 feet in height.—*Tr. of Hind.* i. p. 295.

CHOUK MARAM. TAM. *Casuarina muricata*.

CHOULA, also Choura. HIND. *Dolichos Sinensis*; a pulse commonly cultivated in Hindustan; also called Ruwas and Rumas, and in Persian Lobia.

CHOU LAM. At five months of age, a Hindu ceremony called Choulam occurs, and the lobes of the ears are pierced with a small thin gold ring.

CHOU-LEEN-KE, or Chow-tsze, commenced his labours about A.D. 1034. He died A.D. 1100? From 1241, his views of philosophy, morality, and politics have been supreme in China.

CHOULTRY.

Chattar, Chattram, H. TAM. | Chawadi, . . . TEL.

In the Madras Presidency, a resting-place like the Mahomedan sarai; a police-station, a post-house.

CHOU MASA. HIND. The Indian seasons are, according to the Shastras, six in number, each comprising two months. The common people are content to adopt the more definite division of three. Choumasa, or Bark'ha, constitutes the four months of the rainy season. The rest of the year is comprised in Seenla, Jara, or Mohasa, the cold season; and Dhoobkala, or K'hursa, the hot season.—*Elliot.*

CHOU-MURTI MAHADEVA, a name of the four-faced lingam, one of which is in one of the Ellora caves, others in the Burabur caves, and many in the Gyah district. The meaning is, as an ordinary lingam can be worshipped only looking in one direction, this four-faced one can be looked to from four sides.

CHOURA-DADUR, a plateau in Central India, which has an area of about 1000 sq. miles. It is covered with jungle.

CHOURAGARH, the highest summit of the Mahadeva hills, has an altitude of 4200 feet above the sea; the usual height of the range, which, entering the Nagpur territory from Gawilghur, passes by Dewaghur towards Shiwani, is not above 2000 feet, though in the east of the same chain, where it goes under the name of the Lanji hills, some of the peaks attain an elevation of 2300 and 2400 feet. At Nagpur, the country falls to a level of 1000 feet. On the west, however, it immediately rises by 200 or 300 feet in

a succession of eminences.—*Carter's Geological Papers*, p. 248.

CHOURASSI, HIND., literally, eighty-four, is a revenue term applied to a subdivision of a pargana or district amounting to 84 villages. Tod, in his *Annals of Rajputana*, where the chourassi are numerous, remarks that they are tantamount to the Saxon Hundreds (i. p. 141). The Chourassi, eight-four [townships] of Ruttungurh Kheyr, was in S. 1828 (A.D. 1772) assigned to Madaji Sindia to pay off a war contribution; and until S. 1832 its revenues were regularly accounted for. It was then made over to Berji Tap. Chourassi also is supposed to be the number of solar months in the year, multiplied by the number of days in the week, $12 \times 7 = 84$.—*Tod's Rajasthan*, ii. p. 637.

CHOUREEONA. URIA? A tree of Ganjam and Gumsur. The bark is used medicinally for rheumatism. The flowers are worn.—*Macdonald.*

CHOURPUT. HIND. A fine and light fabric, used as a blanket in Northern India. It is made of the inner coat of the yak or chowri ox.

CHOU-SINGHA. HIND. *Tetraceros quadricornis*, *Jerdon*.

CHOUTAL. MALAY. A Canara tree 40 feet high, and its wood is used by the native coopers in preference to other woods of the country, for casks, vats, tubs, etc.—*Edye, M. and C.*

CHOUTH. HIND. A fourth part, implying the fourth part of the revenue, which was the war-tax imposed by the Mahrattas on all the countries that they conquered. It was a permanent contribution of one-fourth of the revenue, and its exaction formed a peculiar feature of the policy of the Mahrattas during their ascendancy. It was first exacted by Sivaji, A.D. 1676, when he ravaged Kandesh. Payment of it exempted the districts that agreed to it from plunder, so long as it was regularly paid. It was taken from the Hyderabad state and other Dekhan kingdoms; also in A.D. 1735 from the emperor of Delhi.—*Elph.* p. 559.

CHOVANNA MANDARI. MALEAL. *Bauhinia variegata*; B. purpurea.

CHOW. In China, a district. A Chow is similar to a Ting, as also a Heen, but each is a smaller division; each Fu, Ting, Chow, or Heen has one or more towns or walled cities under its guidance, one of which takes its name and rank, as Kwang-Chow-Fu and Shang-Hae-Heen, which latter, although of that subordinate rank, is the largest maritime city in the empire, and the greatest resort of the native ships or junks.—*Forbes, China*, pp. 10, 11; *Sirr*, i. pp. 211, 223.

CHOWAT KURNAT. MALAY. A fibrous material from the Baram river, supposed to be from a species of *Artocarpus*; its bark and bark cloth were sent to the Exhibition of 1851.—*Royle*.

CHOW CHOW. CHIN. Mixed preserves.

CHOW-GHURRAY. HIND. A small box with four partitions, for holding spices, etc.

CHOWHATTIA, a head of a clan of the Miana race. The Miana of Mallia in Mucha Kanta, on the banks of the Muchu river, are the real masters of Mallia. They have a thakur, but own allegiance only to their own chowhattia. The Miana are turbulent, used to take service in the neighbourhood, and in every boundary fight a Miana or two were killed.

CHOWK BYTHNA. HIND. To sit in a circle; a technical phrase among fakirs.

CHOW-LE, a classical author of China.

CHOWLI. *Dikn*. *Portulaca quadrifida*.

CHOWNSUT KHAMBEH, or Chownsat Satoon, as it is commonly called, is a singular structure quite close to the tomb of Nizam-ud-Din Aoleca, near Delhi. As the name implies, it is composed of 64 pillars. They are of white marble, supporting a square roof of the same material, which occupies a tolerably wide area. It is a building of great purity, its pale aspect of white throughout being interrupted by no other colour. The lattice-work that surrounds it is of very delicate execution, and well polished. This building seems to be erected to the memory, if not actually over the remains, of a celebrated poet and historian, Amir Khusrū, a native of Samarcand, and a prince. He was a contemporary and friend of Shaikh Nizam-ud-Din Aoleca, not far from whose tomb this building is raised.—*French's Tour*, p. 13.

CHOWRI, Chamara, or Chaunri. *HIND*. A whisk, made sometimes of peacocks' feathers, sometimes from the tail of the yak, sometimes of spill shavings of sandal-wood, of ivory, or of horse hair, or of grass, and used for the purpose of driving away flies, mosquitoes, and other insects. They are usually seen in the hands of the attendants of the gods. The chamari or chouri from the white bushy tail of the yak or Tibet cow, was in ancient India fixed on a gold or ornamental shaft between the ears of the horse, like the plume of the war-horse of chivalry; the banner or banneret, with the device of the chief, rose at the back of the car; sometimes several little triangular flags were mounted on its sides. 'The waving chowri on the steed's broad brow points backwards, motionless as a picture.'—*Coleman*, p. 376; *Hindu Theatre*, i. p. 199.

CHOWRA, a dynasty that ruled at Anhilpura in Gujerat from A.D. 746 to 942, when they were dispossessed by Mul Raj, a Solunki Rajput. The Chowra dynasty is usually known as the Saura; the natives of the S.W. of India change s into ch.

CHOWRI. *TEL*. (Chavadi.) A caravansary, a choultry, a chatram.—*Wilson*.

CHOWTHEE. *HIND*. The bridal ceremony of untying the kunggun on the fourth day after the shabgisht; a Mahomedan ceremony.

CHOW-YU. *CHIN*. *Dioscorea batatas*.

CHOZAN TARTARS were Israelites professing the Jewish religion, and practising circumcision.

CHRIST, from the Greek word Christos, equivalent to the Hebrew and Arabic Massiha, from Mas'h, anointed. The Christ is Jesus of Nazareth, called Jesus and Jesus Christ, also the Messiah. The Mahomedans' designation is Isa Masiha, Jesus the Anointed; they also entitle him Ruh Allah, the Spirit of God, as Moses is known as the Kalam Allah, the Speaker with God, and Abraham as the Khalil Allah, or Friend of God. Christians and Mahomedans believe him to have been born of the Virgin Mary.

CHRISTIANITY.

Chrétien, Fr. | Cristiano, It., Sp.
Isawi, HIND. | Christian, TAN.

Christians in Southern and Eastern Asia are in many sects, and are the converts to this creed from many races, and since the earliest days of the Christian era. Arabia seems to have early adopted the Christian faith. The Eastern Churches believe that St. Thomas preached in Arabia Felix and Socotra, on his way to India, where he suffered

martyrdom about A.D. 50; and it is said that the rudiments of this religion were first implanted amongst the Hinyarites by St. Bartholomew. It is also recorded that St. Panteus was sent by Demetrius, Bishop of Alexandria, to preach in Arabia Felix, and there he found traces of St. Bartholomew,—amongst others, a copy of St. Matthew's Gospel, written in the Hebrew character, which he brought away with him to Alexandria. In the reign of Tobba, son of Hasan, from A.D. 297 to 320, Christianity became more generally known in Arabia, and extended to Abyssinia, where the people, though surrounded by Mahomedan and pagan tribes, continue Christian till the present day. Subsequently, in A.D. 326, Frumentius was elected by Athanasius, Bishop of the Indians, and he is said to have contributed much to the propagation of the Christian religion, but whether Arabia or Abyssinia was the scene of his labours is disputed. In A.D. 342, Theophilus Indus, a native of Diu, obtained permission to build churches in Yemen, one of which was erected in Aden (Playfair). The Arab conquerors' first emigration from Arabia is supposed to have taken place about 700 years before the time of Solomon, and the Abyssinians appear to be of Arab descent. They were converted to Christianity in the fourth century of the Christian era, and in the sixth they re-crossed over to Arabia to avenge the persecution of Christians by a Jewish ruler, conquered Yemen, and marched to the gates of Mecca, where they were overthrown, two years before Mahomed was born. St. Thomas is believed to have become a martyr near Madras, at the Little Mount, half way between St. Thomé or Mylapur and St. Thomas' Mount. The first historical record of Christianity in India shows that its followers were Persians, followers of Mani. Cosmas Indicopleustes, who travelled in India A.D. 530-550, and afterwards became a monk, mentions the presence of Christians.

Alfred the Great, in A.D. 883, sent Sighelm as an ambassador to the Christians at Mylapur, but there is no authority for his having reached India.

Christianity in Arabia at the time of Mahomed was in a grossly corrupt state. The heresies of Ebion, Beryllus, Nazarean, Collyridians, and Miriamites were current.

At present, in Arabia, there are two sects which have attracted the notice of travellers, because of their names. One of these, the Salebi, from Saleb, a cross, which they reverence; the other are the Sabian sect, who are known to Europeans as the Christians of St. John. But the Salebi seem to be homeless and migratory dwellers in tents, and many races have used crosses; and the Sabians are a sect who have adopted portions of the Jewish, the Christian, and the Mahomedan beliefs. The Kaldi, however, of Mesopotamia are Christians, and have been styled Nestorian Christians, a term which they do not recognise. Throughout those regions, Christians of the Armenian, Romish, and Protestant forms have scattered representatives.

Christianity, according to tradition, was introduced into Armenia by St. Jude or Thaddeus, one of the twelve apostles of Jesus, who converted King Abgar. The Armenian Church separated from the Greek Church of Constantinople in the sixth century, on a dispute concerning the nature of Christ,—the former holding the Jacobite doctrine of his divine and human nature being monophysite,

or united in one; while the latter, like most other Christian churches, holds his divinity to be distinct from his humanity. Persian Christians are chiefly Nestorians, whose evangelical views have sometimes caused them to be termed the Waldenses of Asia. They trace their origin to the labours of the apostle St. Thomas. About 1870 they sent a deputation of two of their chief ministers, named Deacon Abraham and Deacon Marcus, to Britain to solicit aid from British Christians. In that region, the several sects have long been agitated by questions of belief and of church government. The Chaldean Patriarch at Mosul, after the middle of the 19th century, consecrated a bishop for Malabar. The Oriental Catholic Church of the Armenians has entirely separated itself from the papal chair. The United Chaldeans are said to intend to break off all connection with Rome, and the Copts are ready to do the same, and withdraw, like the Maronites, Syrians, and Greek Melchites, from communion with Rome.

The British Indian Government provides funds for army ecclesiastical services of the Episcopal, Presbyterian, and Romish forms, costing in the three presidencies about three lakhs of rupees. The British Government has not alienated revenue for the support of the religions of the country, but maintains what was alienated by their native predecessors. In some cases the land has been resumed and cash payments substituted; but the grand result is as follows in the Madras Presidency: Payments in cash to native religious institutions, per annum, Rs. 8,68,000. The assessment of lands alienated, less quit-rent, equals Rs. 2,30,32,000. The total, therefore, is Rs. 3,20,00,000. This is exclusive of enormous grants of land revenue to Brahmans and others. In 1871 the total acreage for Hindu religious purposes was 1,347,000 acres, assessed at Rs. 22,23,100. The acreage for Mahomedan religious purposes was 137,000, with an assessment of Rs. 2,63,000. The acreage for Christian religious purposes was 2600 acres, and the assessments Rs. 5000. Consequently the total area and revenue alienated was little less than 1,500,000 acres, assessed at twenty-five lakhs.

On all the sea-coasts of the south and east of Asia, and on the great rivers, the people are largely fishers. Those along the coasts at Madras became Christians early; indeed, from the southern outskirts of the town at St. Thomé to its northern village of Ennore, nearly all the fishermen are earnest Christians of the Roman Catholic persuasion. The Koli tribe of fishers in Bombay are nearly all Christians, though they have occasionally wavered. There is something remarkable in the circumstance of the fisher races being amongst the earliest and most eager converts to Christianity in India,—so much so as to render it questionable whether it be only an accidental coincidence, or the result of some permanent and predisposing cause. The Parawa, or fishermen of Cape Comorin, were the earliest proselytes of St. Francis Xavier; and they have still a pride in alluding to the fact that they were the first, as they have since been the most faithful and abiding, of his converts. It was by the fishermen of Manaar that he was invited to Ceylon in 1544; and, notwithstanding the martyrdom inflicted by the raja of Jafna, and the persecution with which they were visited by the Dutch, that district and the adjacent boundary of the Wanny has to the present day

been one of the strongholds of the Roman Catholics in Ceylon. Amongst the Parawa, or fisher caste of the Singhalese, the Roman Catholics have at all times been most successful in their efforts to proselytize.

There were many Christians in Ceylon in the 9th century, and in the 16th century St. Francis Xavier is said to have converted the inhabitants of Manaar. The king of Jafnapatam put 600 of the converts to death; to revenge which, Constantine de Braganza in A.D. 1560 invaded Jafnapatam, destroyed many villages, and is said to have carried off and destroyed the celebrated tooth of Buddha. Throughout the entire of the British territories in Southern Asia are small bodies of Nestorian, Armenian, Romish, and Protestant Christians, of Persian, Armenian, Portuguese, Dutch, Danish, English, and French descent. The census of 1871 showed 896,658 of Christians in British India, as under:—

Bengal,	90,763	Berar,	903
Assam,	1,947	Mysore,	25,676
N.W. Provinces,	22,196	Coorg,	2,410
Ajmir,	249	British Burma,	52,299
Oudh,	7,761	Madras,	533,760
Panjab,	22,154	Bombay,	126,063
Central Provinces,	10,477		

Besides these, there are numbers in the native States of India, and the total may be about 1½ million. The Œcumenical Council at Rome, however, obtained a statement of the numbers in India of the clergy and professing Catholics. It showed an archbishop of Goa, 19 bishops, who are vicars-apostolic, and 815 priests, besides the clergy resident in the island of Goa; and the laity were stated at 1,076,102. The Protestant missions of India, Burma, and Ceylon are carried on by 35 missionary societies, in addition to local agencies, and in 1873 employed 606 foreign missionaries in 3022 principal and subordinate stations. The Romish clergy of British India are almost fully occupied by the duties relating to their respective charges, but the Protestant missionaries are zealous educationalists and propagandists. In India in 1871-72 there were 25 Protestant mission presses. During the ten years between 1852 and 1862 they issued 1,634,940 copies of the Scriptures, chiefly single books; and 8,604,033 tracts, school-books, and books for general circulation. During the ten years between 1862 and 1872 they issued 3410 new works in 30 languages, and circulated 1,315,503 copies of books of Scripture, 2,375,040 school-books, and 8,750,129 Christian books and tracts. But throughout the S. and S.E. of Asia, and in the Archipelago, there may, in the latter third of the 19th century, be about ten millions of Christians, amongst about six hundred millions of Buddhists, Hindus, Mahomedans, and Shamanists, amongst Aryan, Semitic, Mongoloid, and Negro races. In proselytizing, much success has attended the efforts of the Portuguese and Spaniards in India and the Archipelago; and the same may be said of the labours of Dr. Mason and other Baptist missionaries amongst the Karens and other uncivilised tribes of Burma; also of those of Bishop Caldwell amongst the Shanar and other ruder Tamil races of the extreme south of the Indian Peninsula; and of others amongst the Kolarian and Dravidian races of the Central Provinces, and in the Chutia Nagpur province of Bengal. Mahomedans in S. Asia, of Arab and Persian and Moghul descent, adhere to the religious instruction

of their childhood, and very few Hindus of Aryan descent have accepted the Christian doctrines. They have not, however, been quiescent, but, rejecting their own polytheist legends, they have been, from time to time, following monotheistic reformers, and in the 19th century have been trying to construct, under a church, council, or society, bearing the designation of Brahmo Somaj, an unrevealed code, in which they recognise a first principle and the teachings of morality. In British India, amongst Hindu races, the educational efforts of the British Indian Government have been on the largest scale; but over-education has unspiritualized the educational efforts of Christian missionaries, and created a desire for mere worldly advancement, which has killed in some hopeful cases the inner life.

In Cochin and Travancore there have been Jews from prehistoric times, and Christians from the earliest years of the era. Some of them have adopted the Latin hierarchy, others serve under the rule of the Patriarch of Antioch, others under the Patriarch of Mosul, and others, again, are designated Nestorians. The disputes there led to, and followed, the arrival of the Patriarch of Antioch, and on the 4th March 1876 the Travancore Government issued a proclamation, declaring all matters connected with the churches to be adjudicable by the ordinary courts of the country. The Syrian Christians in Travancore are styled Nasrani Mopla, also Pullen Kar; and Mahomedans are Iona Mopla. The Palaya Kar is a convert from the Syrian sect to that of the Romish Church.

The seaboard regions of the Peninsula have many Christian sects meriting notice. One part of these, the Travancore state, is in alliance with the British Indian Government. Its population in 1875 was 2,311,379 souls, of whom 468,000 were Christians, 63 per cent. being Syrians, in part Roman Catholics of the Syrian rite, and the rest Nestorians; Roman Catholics of the Latin rite were 24 per cent., and the remainder Protestants. The Syrian Christians on the Malabar coast date from the earliest centuries of the Christian era.

Cochin is another tributary state on the Malabar coast, with a population over half a million, of whom 140,262 are Christians and 1278 Jews. The Christians belong for the most part to the Romano-Syrian Church, under the Archbishops of Malabar and Goa. The Jacobite and Nestorian Churches were established long before any European settlements there, and they acknowledge the Patriarch of Antioch as their head. The Christians are almost all fishermen and boatmen.

Tinnevely is a British district in the extreme south-east of the Indian Peninsula. In 1871 it had a population of 1,693,979, 102,576 or six per cent. of whom were Christians, mostly of the Parawa race, and those of the Romish and Protestant persuasions were in nearly equal numbers. It was on the Tinnevely coast that St. Francis Xavier landed in 1542, after a short stay at Goa. He found there a small body of Christians; but since his time their numbers have largely increased in Madura and along the coasts of Tinnevely and Ceylon. They have not been free from persecution. In 1549 Father Antonio Criminale became a martyr at Punnakayal. In 1693 John de Brito fell a martyr at Madura; and after the middle of the 18th century (1773) the Portuguese suppressed the Jesuits in their own dominions, and greatly

oppressed the Eastern and Italian missions. Robert de Nobili, in 1607, founded the missions at Madura. Early in the 18th century, Father Beschi, a great Tamil scholar, lived for some time at Kayatar. In 1846 was formed the vicariate-apostolic of Madura, including Tinnevely. Beschi died in 1746. The Protestant missionary Schwartz was in Tinnevely in 1770, Jaenicke from 1792 to 1800; after him came Gericke, J. Hough, 1816, with Rhenius, a man of great ability, Schmid, Dr. E. Sargent, and Dr. R. Caldwell, all of them men of great intellectual ability.

Christianity made much progress in Japan from the time of Xavier and his fellow-labourers. Louis Almeyda, a Portuguese Jesuit, was everywhere welcomed among the territorial princes of Kew-sew. Sumitanda, prince of Omura, became a convert. In A.D. 1582, four noble Japanese went to Rome on an embassy to Pope Gregory XIII., from the princes of Bunga, Aroma, and Omura, and were for eight years absent from Japan. But the secular emperor, Tyco-sama, repressed the movement, and his successor, Eyayyes, issued an imperial edict, A.D. 1638, expelling and exterminating the Christian religion and foreign races. In 1638, 4000 Japanese Christians were thrown into the sea from the Papenburg rock near Nagasaki.

The first missionaries to China were Italians. In the middle of the 17th century, workmen at Sen-gan-fu, in the N.W. of China, found a Syrian inscription, which had been sculptured by the missionaries of the Nestorian Church in the 7th century, and native scholars regard it as a most valuable specimen of the caligraphy and composition of the Tang dynasty. Christianity seems to have penetrated three times into China, the first time in the 5th or 6th century. We learn from the Mahomedan travellers, who visited China as early as A.D. 850, that it then prevailed; and that, when Canton was taken and sacked in A.D. 877, by a rebel army, as many as 120,000 Mahomedans, Jews, Christians, and Parsees perished in the sack. The general who conquered Southern China is stated to have been a Nestorian Christian, and to have built a church at Nankin for those of his own faith. Marco Polo was himself in high favour, though a Roman Catholic. In the 13th it was very flourishing. At this epoch there existed at Peking an archbishop with four suffragans. The Chinese have also for a long time had at their command a precious collection of books of Christian doctrine, composed by the ancient missionaries, and which, even in a purely literary point of view, are much esteemed in the empire. These books are diffused in great numbers throughout all the provinces. Chengiz Khan's wife was a Christian. She was the mother of his four sons, and he was liberal-minded in religious matters. Christianity was encouraged at the Moghul court during the reign of the emperor Jahangir. But Bernier mentions (i. p. 198) persecutions there. Père Ricci went from Macao into the interior of China in A.D. 1585, and established himself in the first instance at Nankin. He removed, after a few years, from Nankin to Peking, where he was well received, and his doctrines made an impression on some nobles of the court. He lived there for many years, the recognised head of several missionary establishments

located in different parts of China, making many converts, and respected by all, until his death, which occurred at the age of fifty-seven, in the year 1610.

A popular uprising began in 1848. It originated in 1830, in the teachings of Mr. Roberts, an American missionary, and of an earnest Chinese disciple. It became blended with the national struggle of the Tae-ping, or the votaries of 'the divine kingdom of eternal peace.' According to the writings of Hung, once a schoolmaster, but afterwards the 'heavenly prince' and acknowledged head, the Tae-ping convert on coming to baptism had to pronounce a solemn vow to take the belief in the Father, Son, and Holy Ghost for his rule of life, and that he was resolved to dedicate this life to God, in love to the brethren; and visits to the tombs of ancestors were enjoined, in gratitude for the release of their immortal souls from this troublesome life, and to renew the vow of life-long devotion to the cause of God and the brethren. The Bible was their word of God, and the ten commandments the moral law; opium-smoking, a sin equal to adultery. The Chinese designate the Christian religion as the religion of the Lord of Heaven; and M. Huc observes that every one must be struck with the new doctrines with which the proclamation and manifestoes of the pretender and his generals have been filled. He styled himself Tien-ti, or Celestial Virtue. The unity of God has been distinctly expressed; and around this fundamental dogma have been grouped a number of ideas borrowed from the Old and New Testament. War was declared at the same time to idolatry and to the Tartar dynasty. A French missionary, who had been very much in the interior of China, states the total number of native Christians at 500,000. M. Huc's estimate was 800,000, which, as he correctly observes, is a mere nothing in the enormous population of the country. These Catholic Christians are, however, not collected in one place, but live scattered over all China proper in small communities, called by the French *Chrétientés*. The members of these Christianities are educated and trained as Christians from their infancy, being either foundlings or of Christian Chinese parentage. They are Chinese in the outward and more obvious characteristics of dress and features, but in other respects are more like Bavarians or Neapolitans than their own countrymen, from whom they differ in many of those social and domestic customs, and in all those mental peculiarities, which constitute the special nationality of the Chinaman.

The portion of India under British rule is divided by the Church of Rome into vicariates-apostolic, each under a vicar-apostolic, who is also a bishop in *partibus infidelium*. The Madras vicariate contains thirty-seven churches, sixty-seven chapels, and thirty-four priests are engaged at work in it. A very successful college in Calcutta, for the education of Europeans and natives combined, is one which belongs to the Jesuit sect of Christians; and there is a similar college at Bombay. At Negapatam, the Jesuit Fathers have a college which is worthy of being spoken of. This college, dedicated to St. Joseph, was founded in 1846 by the Jesuits in charge of the Madura Mission (attached to the province of Toulouse in France), and at a time when education was little appreciated by the people of India. It

occupies the site of the Government House and compound of the Dutch governor, who resided in Negapatam prior to 1781, when the town was occupied by the British under Munro. The library of the college contains nearly 3000 volumes, comprising works in English, French, and other European tongues, Sanskrit, Tamil, and various vernacular languages, and a fair collection of ancient and modern writings in Latin. There is a printing office and a good laboratory. The chapel of the college, dedicated to the Sacred Heart, is a fine vaulted edifice, but rather small for its present requirements. The Catholic parish church near to the jetty at Negapatam is one of the most remarkable structures in the town. These buildings, together with others belonging to the mission, have been erected entirely under the direction of the Jesuits. The vicariate of Pondicherry has 68 European and 26 native priests. It contains 182,126 Christians. The French Government support a college at Pondicherry; and St. Joseph's College at Cuddalore is year by year rising into importance as an educational institution.

Romish, Armenian, Presbyterian, Episcopalian, Baptist, and other Christian sects have cathedral and other churches in every district of British India and the feudatory states, and British, French, Italian, German, and American missions are spread through the country.

The following table gives some interesting facts. We exclude Ceylon, but include Mysore, Pondicherry, Travancore, Hyderabad, and all the Madras Presidency:—

Priests,	1858,	689	1878,	810
Populations,	"	668,689	"	877,315
Pupils in school,	"	4,936	"	27,233

A French mission has settled in Perak, in the Malay Peninsula.

The Protestant Christians, early after the Reformation, sent missions to Ceylon and the south of India. Ziegenbald was the first arrival, followed by Schwartz, Gericke, Kohlhoff, Fabricius, Plutschau, and others. In 1705 Ziegenbald began at Tranquebar; in 1726 the Christian Knowledge Society made a settlement at Madras, under Schultz and Sartorius, Lutheran missionaries; in 1740 Kiernander arrived at Cuddalore, and in September 1758, at the request of Clive, he left Tranquebar to open a mission at Calcutta. Indeed, the missionaries from Europe of the past four centuries, who have devoted their lives to the diffusion of the Christian doctrines, are many,—St. Francis Xavier, Bartholomew Ziegenbald, and also Henry Plutschau Danes at Tranquebar, 1705; John Ernest Grundler at Tranquebar, to whom George I. of England addressed a complimentary letter of 23d August 1717; Schwartz at Trichinopoly and Tanjore; Schultz at Madras; Rottler, Dubois, Rhenius in the S. of India; John Anderson at Madras; Bishop Caldwell in Tinnevely; Ward, Carey, Marshman, Duff, Brown, Buchanan, Thompson, Henry Martyn, Wilson, with Bower, Ellis, Hough, Marks, Mason, Miller, Pallegoix, Winslow of Bengal, Bombay and Madras Christian missionaries, pioneers of civilization, education, human progress and improvement, scientists, ethnologists, and philologists.—*Tennant's Ceylon*; *Meadows' Chinese*, pp. 52-337; *Prinsep's Tibet*; *Bunsen's God in History*; *Huc, Chinese Empire*; *Bishop of Victoria in Japan*; *Travancore Administra-*

tion Report; Playfair's Aden; Lane's Koran; Simmonds; Lord Laurence, Lord Napier, Sir Bartle Frere, Sir R. Temple.

CHRISTIE, DR. TURNBULL, of the Madras Medical Service, gave the first account of porcelain clay at Mangalore, in *Bl. As. Trans.* 1841, x. part 2, p. 967. Also wrote on the Mineralogy and Geology of the Southern Mahratta Country, *Mad. Lit. Trans.* iv. pp. 135, 452, which was reprinted from *Edin. Phil. Jl.*; Instructions for Meteorologists, Observations on and Plan for New Instruments, *ibid.* ii. pp. 41, 70; Observations on the Geology of the Hyderabad Country, *ibid.* 1827. See memoir of, in *Edin. Phil. Jl.* xv. p. 165, and *Mad. Lit. Trans.* xv. p. 150.—*Dr. Buist's Catalogue.*

CHRISTOLEA CRASSIFOLIA, the Shangsho of Ladakh, grows at from 10,000 to 15,000 feet in Ladakh; is browsed by goats, but little by the yak.

CHRISTOPHER, CAPTAIN W., of the Indian navy, author of *Memoir of the Maldiv Islands*, in *Bom. Geo. Trans.*, reprint, i. p. 54; Account of Adam's Bridge and Ramiseram Temple in Ceylon, *ibid.* vii. p. 130; Account of Haines River and the adjoining Country, *ibid.* vi. p. 375; On a Voyage up the Indus and Sutlej, *ibid.* viii. p. 144; Journal of Ascent up the River Chenab, *ibid.* p. 236. He discovered the Haines River in 1842. He was mortally wounded by a cannon shot before Multan in 1848, and died on the 8th October of that year.—*Dr. Buist's Catalogue.*

CHROME IRON ORE, or chromate of iron, is a compound of oxide of chrome with protoxide of iron. It is met with massive, and in octahedral crystals of a blackish colour, and imperfect metallic lustre. It is found in Unst in Shetland, France, Baltimore in America, and in the Madras Presidency, in Salem and Vizianagram; but, as yet, nothing has been done in India to turn this mineral to useful account on a large scale, from the want of proper appliances. The consumption of this substance in Europe is in the manufacture of bichromate of potash for dyes, the chromates of lead for painting, and chromic acid for colouring pottery, porcelain, and glass. Chrome ore in Salem is abundant, but the raw material will not pay the expense of freight. It is of a dark-greenish or nearly black colour, granular. To decompose it by nitrate of potash requires more than a red heat; by caustic potash it is more readily acted on. Chrome yellow, or chromate of lead, is used in dyeing. Chromate of potash is a crystallized yellow salt of a bitter, disagreeable taste, used by calico printers.

CHRONOLOGY. The greater periods employed in the computation of time by the Hindus, though founded on astronomical data, are purely mythological. A complete revolution of the nodes and apsides, which they suppose to be performed in 4,320,000,000 years, forms a Kalpa or day of Brahma. In this are included 14 Manwantara, or periods, during each of which the world is under one Menu. Each Manwantara is composed of 71 Maha Yuga, or great ages, each of four Yuga, or ages of unequal length. These last bear a resemblance to the golden, silver, brazen, and iron ages of the Greeks. The Hindus are laboriously exact in astronomical observations and calculations, but have neglected history.

The only cycle in use among the Turanian races, in old India and Tibet, was that of 50

years, and in the form 12×5 . In the Chaldee chronology, a cycle of 60×10 years was employed (10 Sossi being equivalent to 1 Saros); and Josephus styled the epoch of 600 years which grew out of it, the great patriarchal year. The earliest Chinese chronology rests upon a conventional basis peculiar to itself, that of limiting the lunar year of a cycle of 600 years, which was common to the whole of Northern Asia and the Chaldeans, and probably (as it is also met with in India) to the Bactrians also. This basis is historical. The communication took place before the Chaldees invented the cycle of 600 years. The Chinese observation is based upon the use of the Babylonian (Bunsen). The Chinese, from the time of the emperor Yaou, B.C. 2000, had a lunar year and a solar year.

The Saka, Kaliyuga, and cyclic years of the Hindus commence together about March, and terminate almost simultaneously.

The beginning and end of the day has varied. Among the Greeks and Etruscans the day began at noon; among the Romans, as with the British, at midnight; among the Persians, at sunrise; but among the Jews and Egyptians, as now with Hindus, Mahomedans, and Parsees, it began at sunset.

Three great epochs have been recognised, viz.:

In the history of Babylonia, the fixed point from which time was reckoned, was the era of Nabonassar, B.C. 746.

Among the Greeks, the reckoning was by Olympiads, the point of departure being the year B.C. 776, in which Corcebus was victor in the Olympic games.

Roman chronology started from the foundation of the city, B.C. 753 (various dates).

Of the writers who framed chronological lists, the earliest was Berosus, a priest of Belus, living at Babylon in the 3d century B.C., and who added to his historical account of Babylonia, a chronological list of its kings.

Manetho, a priest of Lower Egypt, gave an account of thirty dynasties of its sovereigns.

Eratosthenes, in the latter half of the 2d century B.C., was keeper of the Alexandrian library, and wrote an important work on geography, and a treatise on chronographia. This was the first attempt to establish an exact scheme of general chronology.

The great cuneiform inscription at Behistun, discovered in 1835 by Sir Henry Rawlinson, and subsequently copied and translated by him, threw a flood of light on some obscure passages of Persian history. And, in the year 1862, Sir Henry Rawlinson published the Assyrian Canon.

The authorities quoted below will show that the chronology of the south and east of Asia has received much attention in the later years of British supremacy; but on the plan of this Cyclopædia, the dates of battles and wars, of events in British India, the advent of reformers and learned men with their literature, will be found alphabetically, and the notice here is restricted to dynasties and eras:—

DYNASTIES, alphabetically.

Adal Shahi of Bijapur, A.D. 1489 to 1579.
Aindra or Vrispala of Andhra, B.C. 21 to A.D. 423.
Arsacide (Parthia), B.C. 255 to A.D. 235.
Arsacide (Armenian), B.C. 130 to A.D. 450.
Asaf Jahi of Hyderabad, A.D. 1717, still reigning.

CHRONOLOGY.

Bactrian monarchy, from the reign of Antiochus II., third of the Seleucidae, B.C. 313?
 Bahmani kings of Kulburga, A.D. 1347 to 1526.
 Balabhi dynasty of Saurashtra, A.D. 0 to 523.
 Belal rajahs of Dwara Samudra, A.D. 984 to 1268.
 Bengal rajahs, A.D. 1378 to 1573.
 Berid Shahi of Beder, A.D. 1498 to 1609.
 Bharat Khandy dynasty, B.C. 916.
 Bikanir, A.D. 1458, still reigning.
 Bundi, a Chohan dynasty, A.D. 1578 to 1819.
 Ceylon, B.C. 543 to A.D. 1798.
 Chalukya of Gujerat, Kandesh, Kaliani, Warangal. See Chalukya.
 Chera or Kong, ended A.D. 894.
 China, Manchu, 1616, still reigning.
 Chohan, at Ajmir, Dchli, Kotah, and Bundi, B.C. 700 to A.D. 1192, when Prithi-raj was slain. Rainasi, successor of Prithi-raj, was slain in the sack of Dchli.
 Chola, ended A.D. 1407.
 Delimi, A.D. 932 to 1055.
 Faruki of Kandesh, A.D. 1370 to 1596.
 Ghor, A.D. 1186 to 1206.
 Gujerat kings, A.D. 1396 to 1572.
 Ghazni, A.D. 961 to 1186.
 Hara, a Chohan dynasty of Haurati, A.D. 1024 to 1575.
 Inad Shahi of Berar, A.D. 1484 to 1568.
 Irak Atabeks,—
 Mosul branch, A.D. 1127 to 1259.
 Aleppo branch, A.D. 1127 to 1197.
 Jeyaulmir, B.C. 94, still reigning.
 Jampur, A.D. 1394 to 1457.
 Kashmir, A.D. 1399 to 1596.
 Kashmir Musalman kings, A.D. 1326 to 1588.
 Khalifs, A.D. 632 to 1242-43,—
 5 Abubakr, Usman, Umar, Ali, and Hasan, A.D. 632 to 661.
 15 Omniales, A.D. 661-2 to 744-5.
 37 Abbassides, A.D. 749-50 to 1242-3.
 Khorasan of Merv, Nishapur, Bokkar, A.D. 747 to 818.
 Tahirides, A.D. 819 to 862.
 Safarides, A.D. 873 to 900.
 Kutub Shahi of Golconda, A.D. 1512 to 1580.
 Lodi, A.D. 1450 to 1526.
 Mahratta Governments,—
 Sivaji, 1644 to 1818.
 Hereditary Peshwas, 1740 to 1818.
 Bhonsla rajahs of Nagpur, 1732 to 1818.
 Sindia, 1724, still reigning.
 Holkar, 1724, still reigning.
 Gaekwar, 1720, still reigning.
 Malwa kings (Pr.), A.D. 1387 to 1568.
 (Cl.), A.D. 1401 to 1512.
 "Marwar" or Jodhpur, 1210, still reigning.
 Maurya dynasty, B.C. 315.
 Mewar or Udaipur, A.D. 727, still reigning.
 Moghul of Tartary, A.D. 1206 to 1226.
 Moghul Tartar or Il-Khani of Persia, A.D. 1259 to 1346.
 Moghul Sultans of Khorasan, A.D. 1393 to 1505.
 Mohul Emperors of Hindustan, A.D. 1494 to 1857.
 Mysore, A.D. 1530, still reigning.
 Nayak dynasty of Madura, A.D. 1530 to 1731.
 Nepal, B.C. 3803 to 3281.
 Kerrat tribe, B.C. 3240 to 1739.
 Suryavansa, B.C. 1658 to A.D. 27.
 Ahr, A.D. 43 to 178.
 Neverit, A.D. 218 to 1749.
 Gurkhal, A.D. 1768, still reigning.
 Nizam Shahi of Ahmadnaggar, A.D. 1490 to 1607.
 Oudh Nawabs and kings, A.D. 1756 to 1847.
 Pandu dynasty of Magadha, B.C. 1400 to 915.
 Pathan Ghoris Sultans of Hindustan, A.D. 1193 to 1555.
 Pathan Sultans of Bengal, A.D. 1203 to 1573.
 Peshadian dynasty, mythological.
 Samanian dynasty of Bokhar, Khorasan, and Persia, A.D. 874-5 to 999.
 Sassanian monarchy of Persia, A.D. 223 to 636.
 Seljuk of Iran or Persia, A.D. 1037 to 1175.
 Seljuk dynasty of Kerman, A.D. 1041 to 1169.
 Seljuk dynasty of Rum or Anatolia, capital Iconium, 1077 to 1283.
 Serunaga dynasty, B.C. 777 to 415.
 Sikh Government of Lahore.
 Sind, Arab governors, A.D. 711 to 750.
 Sumera Rajputs, followed by the Sumera, Sama Rajputs, and the Afghans, till Akbar's time.

CHRONOLOGY.

Slave Kings, 1206 to 1288.
 Sofarides, A.D. 872 to 903.
 Sufi Kings of Persia, A.D. 1499 to 1797.
 Sunga dynasty, 110 years, B.C. 178.
 Syria, Seleucidae, B.C. 334 to A.D. 65.
 Taghalaq, 1321 to 1412.
 Tahirides, A.D. 820 to 872.
 Tibet, B.C. 962.
 Vijayanagar, A.D. 1034 to 1756 and 1829.
 ERAS, chronologically.
 Constantinople era, still used in the Greek Church, dates from the creation of the world. The Incarnation falls in the year 5509.
 Kali Yuga, commenced B.C. 18th February 3102.
 Era of Nabonassar, began B.C. 26th February 746.
 Building of Rome, or Roman era, 752 (various).
 Olympiads, year begins 1st July 776.
 Jain era of Mahavira, B.C. 629.
 Buddha's nirvana, B.C. 543.
 Burmese sacred era, B.C. 543.
 Era of the Seleucidae dates from the time of the occupation of Babylon by Seleucus Nicator. B.C. 311.
 Vikramaditya era derives its name from a ruler of Malwa, and is reckoned from B.C. 56. The term Samvatsaram (contracted to Samvat), meaning simply a year, is used for the Vikramaditya era.
 Christian era. Its epoch or commencement is the 1st of January in the 4th year of the 194th Olympiad, the 753d from the foundation of Rome. It was A.M. 4004.
 Java era, A.D. 74.
 Salivahana era, called the Saka or Shuk, begins A.D. 78, and was so named from a prince who is supposed to have reigned at that period in the kingdom of Narsinga.
 Bali era, A.D. 81.
 Second of the Selencidae year begins B.C. 1st September, but according to the Arabs 1st October, 312.
 Balabhi Samvat, March, A.D. 318.
 Hijira year begins 16th July, A.D. 622, the day following Mahomed's flight to Medina, which took place on the night of Thursday, 15th July. Hijira begins Friday, 16th July, A.D. 622, according to the Ililali, or practical calculation. By the Hisabi, or astronomical calculation, the era commenced one day earlier.
 Yezdejird era, or Parsee or Jalali era, commences with the elevation of Yezdejird III. to the throne of Persia, 16th June, A.D. 632.
 Sur San. Soor San, or Arabian era, commences in the 13th year of the Hijira. It is a solar sideral year. It is also written Suhur and Shuhur, all of them Mahratta corruptions of the Arabic shahr, a month. It was introduced A.D. 1344.
 Kollam Andu era of Quilon commences about September. It is only used in the S. Tamil country and in Travancore, A.D. 824. A.D. 1800 was the 976th of the Kollam era. It is usually called the Parasurama sankam era.
 Parasu Rama cycle of 1000 years. 1st year of 4th cycle, Sept. A.D. 825.
 Nepal Newar era, A.D. 870.
 Vrihaspati cycle of 60 years, established A.D. 966.
 Jalali of Malik Shah, March, A.D. 1079.
 Faali San is four years behind the Hijira era, and is supposed to have been imposed on the people of India by the Mahomedan conquerors. The Hijira year 1200 was 1196 Faali, and 1187 Sur San.
 Faali of Hindustan, established A.D. 1566.
 Faali of Peninsula, established A.D. 1638.
 Bengali San and Valaiti of Orissa, 1566.
 Julian era, invented by Joseph Scaliger, 1582.
 Tarikh-i-Ilahi of Akbar, A.H. 992, A.D. 1584.
 Jalus San of Bijapur of Adal Shah II., 1566.
 Raj Abishek of Mahrattas, 1664.
 Epoch of the Indian cycle of 90 years, or Grahaparivritthi, begins with the Hindu solar year 24. The first year of the 21st cycle was A.D. 1777.
 —Sharpe's *Hist. of Egypt*, i. p. 58; Lieut.-Colonel John Warren's *Kala Sankalita*; Bunsen's *Egypt*; Burnell's *Indian Palaeography*; Prinsep's *Useful Tables and Indian Antiquities*; Cowan's *Potell's Chronology*; C. P. Brown's *Cyclic Tables and*

Carnatic Chronology, 1863; *Robert Sewell's Chron. Tables for S. India, from the 6th Century A.D.*; *Dictionary of East Indian Dates*; *T. McCulder's Oriental Eras*; *Bombay Chronological Tables*; *Chronology of the Hindus*, Cambridge, 1820. See British India.

CHRYSANTHEMUM ALBUM. Peh-kiuh-hwa, CHIN. The ashes of the flowers are said to destroy insects. The *Chrysanthemum* genus of plants belongs to the natural order *Compositæ*, and the sub-order *Corymbifera* or *Asteraceæ*. The species are very numerous in the temperate parts of the earth (*Eng. Cyc.* p. 1058). The name is from two Greek words, *Chrysos*, gold, and *Anthos*, flower.—*Smith*.

CHRYSANTHEMUM INDICUM. *D. C.* Gul-dawadi, HIND. Grows in several parts of India, and is used medicinally in calculus.—*Drury*.

CHRYSANTHEMUM PERUVIANUM turns continually towards the sun. As a general rule, however, all plants turn towards the sun. *Hypochoeris radicata* and *Apirgia autumnalis* are seen in meadows turning towards the sun, and species of *Melampyrum* and *Narcissus* turn similarly.—*Winslow on Light*.

CHRYSANTHEMUM ROSEUM. *Adam.* *Pyrethrum roseum*, *Bieb.* A perennial herb of S.W. Asia, with *C. coronopifolium*, *Willdenow*, yields the Persian insect powder.—*F. von Mueller*.

CHRYSANTHEMUM ROXBURGHII. *Desf.*

<i>C. senecioides</i> , <i>Dun.</i>	<i>Pyrethrum indicum</i> , <i>Roxb.</i>
<i>Maticaria oleracea</i> , <i>Buch.</i>	<i>Pinardia Roxburghii</i> , <i>Less.</i>
<i>Glebionis Roxburghii</i> , <i>Cass.</i>	
Bagaur, . . . CHENAB.	Gendi, . . . HIND.
Christmas flower, . . . ENG.	Kalzung, . . . LADAKH.
Gul dawadi, . . . HIND.	Chamanati, . . . TEL.

The plants commence flowering generally in November, and continue for several months. The colours are mostly yellow, orange, and a purplish colour mixed with white. They are made into garlands, and offered at the shrines of Vishnu and Siva. They are commonly cultivated in gardens in the plains of India, in Kashmir, Upper Chenab to 9200 feet, and in Ladakh at 11,300 feet.—*Ainslie*; *Dr. J. L. Stewart*.

CHRYSANTHEMUM SINENSE is extensively cultivated in European gardens, and is the Chinese gardener's favourite winter flower, although it is generally past its full beauty at the Chinese new year. There is no other plant which he takes so much pains with or which he cultivates so well. His camellias, azaleas, and roses are well grown and well bloomed, but in all these the people of Britain excel him. In the cultivation of the *chrysanthemum*, however, he stands unrivalled. It is in great request among the people, and is used in the decoration of courtyards, halls, and temples. It is everybody's plant, and blooms alike in the garden of the lowly Chinese cottager as in that of the red-buttoned mandarin.—*Eng. Cyc.* p. 1052; *Fortune's Tea Districts*, p. 125.

CHRYSE, 'the gold land' of the *Periplus*, has been supposed to be Pegu, the *Suvarna Bhumi* or Golden Land of the old Indian Buddhists. *Sonaparauta*, a term of like meaning, is still the sacred or classical term for the central territories of *Ava*. Gold-scatterer, *Zar-afshan*, is applied by the people of Central Asia to the head-streams of the *Oxus* and *Jaxartes* ending in the inland sea of *Aral*.—*Periplus of the Erythræan Sea*; *Yule, Cathay*, i. p. 114.

CHRYSIDIDÆ, or golden wasps, do not sting, but possess the power of rolling themselves up into a ball, which is almost as hard and polished as if really made of metal. They are all adorned with the most gorgeous colours.

CHRYSOBALANACEÆ of *Lindley*, the cocoplum tribe of plants, has the genera *Chrysobalanus* and *Prinsepia*. Roxburgh mentioned *C. racemosa* of the Moluccas. *C. icaco*, the cocoa-palm tree of the West Indies, has been introduced into India.

CHRYSOBERYL, or prismatic corundum, is found among the Tora hills near Rajmahal, on the Bunas, in irregular rolled pieces, small, and generally of a light green colour. These stones are considered by the natives as emeralds, and pass under the name of 'puuna,' but the natives are aware that they are softer than the real emerald.—*Gen. Med. Top.* p. 160.

CHRYSOPHYLLUM ROXBURGHII. *G. Don.*

C. acuminatum, *Roxb.*, star apple.

Hali mara, . . . CAN.	Tarses phal, . . . MAHR.
Pita-kara, . . . HIND.	Lawooloo-gass, . . . SINGH.

This tree, one of the *Sapotacæ*, grows to thirty feet or more. In Canara and Sunda, it is very common in the jungles near the ghats above, particularly to the south. There are some trees in the Residency garden at Hyderabad. The wood seems straight and good, but the tree is chiefly noticeable from the gutta-percha-like incrustation common on the fruit. Fruit, about the size of a large crab-apple, ripens in October, and is edible but insipid. Not uncommon in the warmer parts of the island of Ceylon.—*Gibson*; *Thw.* iii. 174.

CHRYSOPOGON ACICULARIS. *Host.*

<i>Andropogon acicularis</i> , <i>R.</i>	<i>Rhaphis trivalvis</i> , <i>Lour.</i>
Gnung-myeet, . . . BURM.	Lampa, . . . HIND.
Spear grass, . . . ENG.	Shunini, . . . SANSK.
Chor-kanta, . . . HIND.	Katl-chettu, . . . TEL.
Soorwala, . . . "	Katie-gaddi, . . . "

Abundant in barren land; troublesome to the feet of those who walk among it; eaten by cattle when other grass is not to be had. Its seed stick in the stockings, and produce a disagreeable itching. A longer variety, known solely as 'soorwul,' is an excellent grass for cattle.—*Mason*; *Genl. Med. Top.* p. 176.

CHRYSOPRASE, from *Chrysos*, golden or beautiful, and *Prason*, leek, is a rare, pale apple-green chalcedony, which owes its colour to the presence of the metal nickel. It is found in many parts of India, in Upper Silesia, and Vermont.

CHRYSORRHCEA, or 'Golden Stream' of the ancient geographers, is the Barrada river of Damascus, which, so soon as it issues from the cleft in the mountains, is immediately divided into three smaller courses. The largest, which is the middle one, runs directly to the city, and is there distributed to the different public fountains, baths, and cisterns; whilst the other two, branching off right and left, contribute mainly to the luxuriant vegetation which adorns the environs. South-east of the city their scattered waters unite again into one channel, and, after flowing towards the eastern hills for two or three hours, are finally lost in a marsh which, from one side view, appears like a small lake. Well may Damascus be called *Sham-i-Shercef*, the noble and beautiful.—*Robinson's Tr.* ii. p. 115.

CHU, or *Chu-ma*, or *Techu-ma*. CHIN., *Bæhmeria nivea*; China grass.

CHU. TIBETAN. Water. In Scythian, Ku; Assyrian, Hu; Greek, Eu.

CHUA. HIND. Rosa Webbiana. In Kulu, an amaranth cultivated for its grain; *Amarantus oleraceus*.

CHUAL. HIND. *Staphylea emodi*, also *Euonymus fimbriata*.

CHUAN-YUAN, in the classical education of the Chinese, is the highest in the annual examination,—the senior wrangler and senior classic from amongst 400 millions of people.

CHUBIRI. MALAY. Chillies.

CHUBREI. HIND. *Dactyloctenium Aegyptiacum*, also *Eleusine flagellifera*.

CHUCH. HIND., *Juniperus communis*. TURK., a thorny shrub in Balkh, grazed by camels.

CHUCH, a valley near Attock, on the Indus, where gold is washed.

CHUCHI. HIND. *Polygonum polystachyum*, also *Rheum emodi*.

CHUCHO. MALAY. Leaves used by the Jakun for thatch.

CHUCKERBUTTY, a class of Brahmans in Bengal, so called by the British in India. The word is a corruption of Chakravarti, meaning a prince or ruler over a large circle.—*Wils. Gloss.*

CHUCKLER. ANGLO-TAM. From Tamil, Chakili, a shoemaker, a tanner.

CHUCKOONDA. HIND. *Beta vulgaris*; beet.

CHUCKRANKETAM, also called Moodra dharanam; amongst Vaishnava Hindus, the rite of stamping with a hot iron stamp the emblem of Vishnu on the arm of a Vaishnava lad or man. It is equivalent to the confirmation of Episcopal Christians; it is an initiatory rite.

CHUCKRATA, a hill station in the Dehra Doon division, 1119 miles from Calcutta, 38 miles west of Mussoori.

CHUDA KARANAM. BENG. The ceremony of shaving a Hindu boy's head between the third and fifth year, leaving a single lock on the scalp, called Chuda, Chura, Chula, or Chonta.

CHUDEER, properly Chadar. HIND. A blanket, sheet, or shawl. Those of Rampur are famous. Also a dam across a river, as the Chadrghat.

CHUDRA KANTA KARI. BENG. *Solanum jacquini*, Willd.

CHUEN-SEE, taken 7th January 1841.

CH'UEN TSIAU. CHIN. *Xanthoxylon alatum*.

CHUHA. HIND. A rat. Kan-ka-chuha, the large-eared rat of Kaghan, the marmot or arctomys.

CHUHA, a people in the Chuha district on the river Hub, which falls into the sea at Cape Monze. They are said to be of Sumrah or of Brahui origin.

CHUHARA. HIND. Apricot; also *Phoenix dactylifera*.

CHUH-HWANG. CHIN. Tabashir.

CHUHRA. HIND. The humblest village servants, Bhangi, Halal-khor, Mihtar, etc.—*Wilson*.

CHUI. BENG. Piper chaba. Chui, of Chamba, *Pyrus malus*, apple tree.

CHUI SHUPA. *Juniperus communis*.

CHUJ. HIND. *Fraxinus xanthoxyloides*.

CHUK. HIND. A plantation, a reserve.

CHUKA. GUJ., rice. MALEAL, vinegar, sorrel. HIND., *Sida cordifolia*; *Rumex vesicarius*.

CHUKAN PALLAM. TAM. *Bryonia*, sp.

CHUKA-ZUM, a chain bridge stretched over the Tehintchieu river, a short distance above the castle of Chuka.—*Turner's Embassy*, p. 54.

CHUK DAR. HIND. A wooden frame sunk as the foundation of a well.

CHUKE, Chabai, Beya, and Sambutan are Malay customs.

CHUKKADUMPA. TEL. *Habenaria platyphylla*, Spreng. Chukka kada, *Bigelovia lasiocarpa*.

CHUKKALI CHETTU. *Epicarpurus spinosa*.

CHUKKAR or Chakra, a Sikh weapon resembling a quoit in size and shape, thrown from the finger with a rotatory motion.—*Herklots*.

CHUKKEE, a hand-mill. Chukkee nama, a song sung while grinding at the mill; at weddings.

CHUKMA, a race, in number 28,000, occupying the Toonia Joom mahals, a forest tract in the hills of the Chittagong district, along with Mug, Reang, and Tiperah races, all more or less nomadic. Some one of these hill races till lately performed human sacrifices annually, and in the year 1852 several were tried for murder by sacrificing. The place of sacrifice was a cleared district in the jungle, and staked round with bamboos about six feet high. The sacrificial pole was a Phula bans bamboo, scraped and stripped at the edges, the hanging strips giving a rude notion of ornament. During the celebration of these sacrifices at Agartollah, a gun was fired every evening at sunset, when every person hurried to his home.

CHUKOTARA. HIND. *Citrus decumana*.

CHUKRI. HIND. *Rheum emodi*, also *R. palmatum*; a powder of the dried acid stalks of the rhubarb.

CHUKUDDI PATTA. TEL. *Cassia absus*.

CHUKUL MORA. CAN. *Acacia elata*.

CHULA. HIND. *Euphorbia Royleana*.

CHULA or Chulla. HIND. A fire-grate made of mud or bricks; a fireplace, a hearth, and equivalent to the English hearth as a home. A native of India wishing to express his poverty, would say there was no fire in the hearth; or to indicate the number of his divided family, would observe that three fireplaces are burning.

CHULAH. HIND. A tribe of T'aga in Baghpat.

CHULAI. HIND. *Spinacia tetrandra*; also *Amarantus polygamus*, Linn.

CHULCHILHERA, a lichen of the Himalaya, the Borrera ashneb, *Royle*; with ammonia it gives a reddish-brown colouring matter, and is used accordingly as a dye-stuff. Dr. O'Shaughnessy examined this and several other Indian lichens, but without success in the production of any valuable colour. It means, in the Panjab, a mixture of lichens employed for dyeing, contains *Parmelia Kamtschadalis*, *Parmelia perlata* and its variety *sorediata*, *Usnea florida*, *Ramalina calicaris*, and fragments of *Physcia leucomela*.—*O'Shaughnessy*, p. 672.

CHULI, a whirlpool. In the stream of the Chamba near Berolli, the whirlpools and eddies have given a sacred character to it, like the Nerbadda, at the whirlpools of the great god Chuli Maheswar. A multitude of round stones are found in these vortices, where they have been rounded by attrition into a perfectly orbicular form, are consecrated, and smeared with red lead, and are then called Bhyru, the god of war, the eldest son of Siva. The round stones of the Nerbadda whirlpools are called Ban-Lang, or whirlpool lingam, and Rori at the temple of Berolli. See Binlang.—*Tod's Travels*.

CHULI. HIND. *Prunus Armeniaca*, also *Prunus padus* and *Villarsia Indica*.

CHULI, a Mahomedan of Malabar; amongst the Malays, any native of S. India. The Chulia and Kling comprehend the traders and settlers, both Mahomedans and Hindus, from the Coromandel coast. These names have been given to them by the Malays from the earliest times of the ancient commercial intercourse subsisting between this part of Asia and India. Kling is from Kalinga, or is a corruption from Teling or Telinga; Chulia may be derived from the ancient Chola kingdom of the Peninsula.—*Newbold's British Settlements*, i. p. 8.

CHULLA, also Charz. HIND. *Sypheotides auritus*, *Latham*; the lesser florikin.

CHULU. HIND. Of Himalaya, *Armeniac vulgaris*, *Lam.*; the apricot.

CHUM. HIND. *Euphorbia Royleana*; also *Morus serrata*; also *Fraxinus xanthoxylloides*.

CHUMANG, a low or out-caste race in the non-Bhot districts of Kunawar, with dark skins. The people of the lower hills call them Koli, and the Rampur people, Chamar. They till the soil and weave.

CHUMAYAN, a Gujar clan occupying twelve villages in Paniput Bangur.—*Elliot*.

CHUMBA. HIND. *Artemisia sacrorum*.

CHUMBA-GUDDEE, a race in the Chumba hills, in the Himalaya. They say they are Rajputs, and of the Guddee-jat. They are somewhat short, but strong, and cleanly in their habits. They are sharp, and able to impose on their less knowing neighbours. Most of the witch-finders are of the Chumba-guddee race; and the race may always be known by their peculiar conical caps, with lappets to turn down over their ears, like an English travelling cap. When Europeans made their first appearance in the Kangra valley, these men had very slight notions of caste, and would eat or drink anything the Europeans gave them, but since their contact with the natives of the plains they have become as bigoted as any Hindu.

CHUMBARA. MAHR. *Premna tomentosa*.

CHUMBELI. HIND. *Jasminum grandiflorum*.

CHUMBI SAG. HIND. *Amarantus polygamus*.

CHUMBRANUK, a single valve of the mussel shell without the mollusc, used in Ajmir as an aphrodisiac.—*Gen. Med. Top.* p. 132.

CHUMBUL, a tributary to the Jumna. It rises in Malwa in lat. 22° 26', and long. 75° 45', 8 or 9 miles S.W. from Mhow, which is 2019 feet above the sea. It rises on the cluster called Janapava. It runs north 105 miles, N.W. 6 miles, S.E. 10 miles, N.E. 23 miles, S.W. 25 miles, north to junction with Kalee Sind, N.E. 145 miles, S.E. 78 miles to Jumna; length, 570 miles; described in a form nearly semicircular, the diameter being only 30 miles. It receives the Chumbela, 70; Seepra, 120; Parbati, 220; Kalee Sind, 225; Banas, 320; Chota Kalee Sind, 104 miles. About 56,000 square miles drained. The average declivity of its bed, 2 feet 5 inches per mile. Its average volume of water is so considerable, that at its junction it has been known to raise the united stream 7 or 8 feet in twelve hours. The nominal source of the Chumbul is in a part of the Vindhya range, 9 miles S.W. of Mhow; but this part of the river is dry in the hot season, during which it owes its waters to other tributary streams. The current is in most parts gentle, its bed rocky, and its course through Malwa much obstructed by shallows; but, after entering Harrowtee by an opening in the Mokundra range,

it becomes a fine and deep stream. The course of the Chumbul, not reckoning the minor sinuosities, is upwards of 500 miles; and along its banks nearly every race now existing in N.W. India may be found,—Sondi, Chunderawut, Sesodia, Hara, Gore, Jadoon, Sikerwal, Goojur, Jat, Tuar, Chohan, Bhadoria, Kutchwaha, Sengar, Boondela, each in associations of various magnitudes, from the substantive state to the little republic communes between the Chumbul and Cohari. The Chumbul runs through the territories of Sindia and Holkar, viz. Gwalior and Indore, and passes near Kotah.—*Tod's Rajasthan*, i. p. 16; *Rep. Royal Com.*

CHUM GADHAAL. HIND. One of the Cheiroptera, the flying-fox, species of *Pteropus*.

CHUMIAH, a race to the north and east of Chittagong, dwelling in the lower hills between the Kuki and the plains. The Chumiah and the Kuki are described as having flat noses, small eyes, and broad round faces, and to differ from the Naga race both in appearance and customs.

CHUMIARI. PANJ. *Cerasus puddum*.

CHUMKI. HIND. Coloured and striped satins, red, white and red, and blue and red, value 1 rupee to 2½ rupees the yard.

CHUMLA, a valley near the Bunair or Bunnor country in Afghanistan. The valley and the central plain of the Yusufzai are commanded by hills that descend from the Hindu Kush.

CHUMPA, properly Champa or Champaka, the *Michelia champaca*, *Linn.* The flower of the champa is one of the five with which Kama, the Hindu god of love, tips the arrows he uses.

CHUMPADA. MALAY. The small jack-fruit.

CHUMPA NUTIA. BENG. *Amarantus polygamus*.

CHUMPARUN, a town in the Patna division of Bengal.

CHUMPOUTE, the berry of a small plant, brought to Ajmir via Pali, used in perfumes and also in medicine; one seer is sold for one rupee.—*Gen. Med. Top.* p. 131.

CHU-MURTI, a Chinese district bordering on Ladakh.

CHUMWA, a tribe in Assam, exempt from manual labour.—*Wilson*.

CHUNA. BENG. Also Chuna-batoola and Chunai Butkale, *Cicer arietinum*, *Linn.* It is the Bengal gram of Europeans in India. Through the Italian cece and the French chicker comes its English name 'chick-pea.' The term 'arietinum' is derived from the resemblance of the seed to a ram's head. The word used by Europeans in India is gram, or Bengal gram, of which the origin has been much disputed, but is supposed to be from grana.—*Elliot*.

CHUNAM. ANGLO-TAMIL.

Chunna; Chunnam, HIND. | Sunamu; Choonnoo, TEL. Chunambu. TAM.

Chuna or Chunam is a term applied to quicklime made from nodular limestone, from limestone rock, from marble, or from calcined shells; also applied to plaster and mortar. The chunam plaster of Madras, long famed for its marble-like polish, is prepared either from shells or limestone. The shells generally used at Madras are both recent and fossil, but the latter, of recent species, are found in extensive beds a few feet below the surface, on the banks of the Pulicat lake and other low marshy places on the sea-coast, which are covered by the sea at high water.

The shells are calcined with charcoal, one parahi of charcoal being allowed to every two parahs of chunam. The kilns generally used are calculated to hold altogether 60 parahs, that is, 40 of shells and 20 of charcoal. A small arch, 1 foot 3 inches in height, the same in breadth, and raised 5 feet above the surface of the ground, runs longitudinally through the kiln; the top of this arch is a grating of brick on edge, which is partially covered with broken tiles, so that neither the shells nor charcoal can drop through them, but small apertures are left for the escape of the ashes and for the necessary circulation of air. Over this bed a layer of charcoal is first placed throughout, about 3 inches in thickness, and fire applied. When sufficiently kindled, the mixed shells and charcoal are laid in small heaps of not more than $\frac{1}{2}$ of a parah each at about 1 foot 6 inches apart, and when the fire has been communicated to them, the intermediate spaces must be filled up with more shells and charcoal to a level; and when the fire has thoroughly extended to them also, another row is to be laid in a heap upon this mass, as was done in the first instance; and in the subsequent operations are to be repeated in the same manner until the kiln is filled. The transverse arches are to promote the requisite current of air, and the windward ones are invariably to be kept open, whilst those on the opposite side must be closed. The kilns used at Madras are built of brick or clay, and require renewal every three years. The shells will be sufficiently calcined in 12 hours, and 24 more are required to cool them, so as to admit of their being moved and the charcoal sifted from them. It is found that chunam thus prepared and slaked to a powder is increased to double its original bulk when in the form of shells.

For plastering with chunam at Madras, if for one coat, the plaster is composed of one part of chunam and one and a half of river sand, thoroughly mixed and well beaten up with water. This operation is usually performed by women, who stand round a small stone trough prepared for the purpose, into which the ingredients are thrown and gradually moistened with water, as the process of mixing proceeds. The women use wooden pestles shod like a rice-pounder. The plaster, when mixed, is taken out of the troughs and made into conical heaps, where it remains till required, and may be kept without injury for several months; but when left for any time, a small cistern or hollow is made at the top of the heap, into which water is occasionally poured. Before applying the plaster, the wall is trimmed with a trowel and swept perfectly clean, and then slightly sprinkled with water. The wall being ready, the plaster is put into small wooden boxes at convenient places among the bricklayers, by whom it is mixed up with jagari water, $\frac{1}{2}$ lb. of jagari or coarse sugar being allowed to every parah of quicklime, until it is brought to the required consistency; it is then laid on with a trowel above half an inch thick, and levelled with a flat wooden rule, being afterwards smoothed with a wooden rubber till it acquires an even surface. During the process of rubbing, the plaster is occasionally sprinkled with a little pure white lime mixed with water, to give it a hard surface. If for two coats of chunam, the first coat is applied as already described, with the exception that the surface is left rough,

and no pure lime is applied during the process of rubbing. A day or two after the first coat is applied, and while moist, the second is laid on. The plaster used for the second coat consists of three parts of lime and one of white sand. These are mixed as before, and afterwards ground by women on a flat stone with a small stone roller, till they are reduced to a fine paste. This is laid on a wooden rubber, and applied with care over the first coat about $\frac{1}{4}$ of an inch thick. It is then rubbed down perfectly smooth with a small trowel, and afterwards polished with a crystal or smooth stone rubber, and as soon as it has acquired a fine polish, a little very fine potstone (Ballapum) powder is sprinkled on it to increase the whiteness and polish, and the polishing continued. The second coat ought to be applied and finished in one day, for it usually hardens too much during the night to be polished the following day, except in damp weather. The practice is to continue polishing the plaster until it is quite dry, and a number of bricklayers are employed, in order that it may be well polished the first day. Moisture continues to exude from the plaster for some days after it is completed; this must be carefully wiped off with a soft cloth, and the wall kept perfectly dry till the moisture entirely ceases. For three coats of chunam, the first coat is as above, but it is left a fortnight or three weeks to dry before the second coat is applied. The plaster for the second coat consists of one part of lime and one of fine river sand, freed from the coarser particles and clay by sifting. It is well-mixed and beaten up in a clean trough, and applied over the first coat about $\frac{1}{4}$ of an inch in thickness, the first being previously moistened with a little water. It is next rubbed down in the same manner as the first coat, but acquires a much smoother surface, the plaster being of a finer quality. A day or two afterwards, when it has had time to dry, the third coat is applied. It consists of four parts of lime and one of fine white sand. These, after being well mixed, are reduced by grinding to a very fine paste, quite free from grittiness. This is put into a large earthen jar, of the size nearly of half a hogshend, and mixed with the white of eggs, sour milk (tyre), and ghi, in the proportion of 12 eggs, 1 $\frac{1}{2}$ measures of tyre, and $\frac{1}{2}$ lb. of ghi to every parah of plaster. These are all thoroughly mixed, and rubbed between the hands till the ingredients are thoroughly incorporated, and the composition reduced to a uniform consistent paste a little thicker than cream, and perfectly free from grittiness. The plaster is now fit for use, and is put on with a wooden rubber about $\frac{1}{4}$ of an inch thick, and gently rubbed till it becomes perfectly smooth. Immediately after this, another coat of still finer plaster is applied, consisting of pure lime ground to a very fine powder, and afterwards mixed with water in a clean tub, till it is of the consistency of cream. This is put on about $\frac{1}{4}$ of an inch thick with a brush, and rubbed gently with a small trowel till it acquires a slight degree of hardness. It is then rubbed with a rock-crystal or stone rubber till a beautiful polish is produced, not forgetting to sprinkle the wall with fine potstone (Ballapum) powder during the process of polishing. If the plaster is not entirely dry on the second morning, the operation of polishing ought to be continued until it is quite dry. The moisture, as above directed, must

be carefully wiped off, and the wall kept quite dry till all appearance of moisture cease. The result of the process depends chiefly on the plaster for the upper coat being reduced to a very fine paste perfectly free from grittiness, and on its being, after it is applied to the wall, rubbed constantly with great care till it is quite dry and has acquired a very fine polish. The wall ought then to be frequently wiped with a fine clean cloth to remove the moisture, and it may be occasionally dusted with Ballapum powder. The stone used in polishing it is rock-crystal or a white quartz pebble about 3 inches long and $1\frac{1}{2}$ broad, the face of which has a very fine polish. The wall is rubbed with this for one or two days, the moisture being carefully wiped off every morning, and potstone (Ballapum) powder sprinkled on it several times during the day. When the lime is prepared from sea-shells, these are first cleaned and washed, and then calcined with charcoal, care being taken to exclude everything likely to injure the whiteness of the lime; very white sand only is employed, as common sand destroys the brilliancy of the plaster. When white sand is not procurable, white rock-crystal or quartz pebbles reduced to a fine powder may be substituted. Mortar for building consists of one part of chunam and two of sand. Immediately before being used, the mortar is mixed with jagari water, 1 lb. of jagari being allowed to every parah of lime. It is used in a much more fluid state than is the practice in Europe. When shell-lime is used in situations requiring a hydraulic cement, it should be mixed with burnt clay in powder; fresh burnt tiles more or less broken are in general conveniently procured. In building the pier at Masulipatam, Captain Buckle employed a cement consisting of one part of lime, one of the tile dust, and two of sharp river sand, and it appeared to answer well. Jagari was used in the usual proportion of one pound to a parah of chunam. Limestone abounds in most districts of Southern Asia, but the qualities of the different varieties are best ascertained by experiment. When found in large blocks of very compact stone, the breaching of it forms a considerable item in the expense. Such stone as yields very hydraulic lime is not suited to the purposes of ordinary building, unless the precaution is taken of keeping the work constantly wet. The best form of kiln for burning stone with charcoal is given by Captain Smith in his translation of Vicat, plate 1, fig. 11 and 12. When wood is used, the spheroidal form of kiln is recommended. It will be found to facilitate the expulsion of carbon, if the stone is well moistened in water previous to placing it in the kiln. It should be remarked that nothing but clean sand should be added to the hydraulic limes; such limes should be used immediately after slaking. When used in situations requiring hydraulic cement, no more water should be used in slaking it than is sufficient to reduce it to a fine dry powder. Magnesian limes have been found at Salem and in the Tanjore district, where it was used with success by Captain Cotton in forming the anicuts; the cement formed with it was stronger than that formed with other lime. It should not be immersed immediately on being used. Much controversy has occurred in regard to the advisability of using the lime while hot; the generally received opinion is that it should be so used; but

in regard to the pure limes, free from clay and iron, that is, without hydraulic properties, this course is questionable. It was not permitted in Rome; and lime mortar kept moist has been found suitable for building after the lapse of several hundred years; lime used hot is seldom thoroughly slaked. A common practice in India is to mix the slaked lime and sand, form it into heaps, on the summit of which is formed a hollow, which is kept constantly filled with water. Shell-lime, so kept and subjected to the usual beating when used, seemed to Mr. Rohde at least as good as when at first burned; hydraulic limes, including of course all which become hard under water, ought no doubt to be used hot. At Ternate, and other coral islands, coral is largely burned into lime for mortar.—*Rohde, MSS.*

CHUNAR or Chanar, an ancient rock fortress in the Mirzapur district in the valley of the Ganges. It is perched on the crest of a limestone spur that rises to the height of 150 feet abruptly from the edge of the stream, on the right or south bank. It fell to the British in 1764. The treaty of Chunar between the subahdar of Oudh and Warren Hastings was signed on the 19th September 1781. In the fortress is a state prison in which Trimbukji Danglia pined away his last days, hopeless of ever being able to give a second slip to his enemies.—It is 17 miles W. of Benares, and 490 miles from Calcutta.—*Trav. of Hind.* i. p. 132.

CHUNAR. HIND. The *Platanus orientalis*. Char-Chunar lake, the Shalimar garden, was one of the great works of Jahangir.—*Baron Hugel.*

CHUNARU, also Chuanari. HIND. Lime-burners, or workers in lime, as plasterers.

CHUN-CHU. CHIN. *Ailanthus foetida* and *A. glandulosa*; but also *Cedrela odorata* and species of *Dryandra* and *Fraxinus*.—*Smith.*

CHUND, a Hindu poet and religious reformer, but now known only in the former character. He lived in the time of Prithi-raja, the last Hindu king of Delhi. He was a monotheist, and, after having separately invoked the three persons of the Hindu triad, says that he who believes them distinct, 'hell will be his portion.' His work is a general history of the period in which he wrote. It consists of 69 books, comprising 100,000 stanzas, relating to the exploits of Prithi-raja; and every noble family of Rajasthan finds in it some record of their ancestors. It is accordingly treasured amongst the archives of each race having any pretensions to the name of Rajput. From this he can trace his martial forefathers, who 'drank of the wave of battle' in the passes of Kirman, when 'the cloud of war rolled from Himachil' to the plains of Hindustan. The wars of Prithi-raja, his alliances, his numerous and powerful tributaries, their abodes and pedigrees, make the works of Chund invaluable as historic and geographical memoranda, besides being treasures in mythology, manners, and the annals of the mind. They are entirely heroic; each book a relation of one of the exploits of Prithi-raja.—*Tod's Rajasthan*, i. p. 98, ii. p. 254.

CHUNDA. MALEAL. *Solanum Jacquini*.

CHUNDA GUDDA. TEL. *Tacca pinnatifida*, L.

CHUNDAO, Chundul, or Chandal. HIND. *Antiaris saccidora*.

CHUNDA SAHIB, a Mahomedan ruler with whom the French sided in their efforts to establish

themselves in the south of India. In the beginning of the 18th century, Sandut Allah was ruler of the centre of the Karnatic, from 1710 to 1732, and was succeeded by his nephew, Ali Dost. Ali Dost was killed in battle against the Mahrattas, and was succeeded by his son, Safdar Ali. Of his two daughters, one married Chunda Sahib. Chunda Sahib seized on Trichinopoly in 1736, but the place was besieged and taken by the Mahrattas, and Chunda Sahib was made captive, and lingered eight years in prison at Tanjore, where he was murdered by the raja. Safdar Ali was assassinated by his brother-in-law, Murtuzza Ali, leaving a minor son; but this youth also was assassinated while Anwar-ud-Din was his guardian, and Anwar-ud-Din succeeded to the throne as nawab of the Karnatic, but fell at the battle of Ambur, and is buried in the Jamia mosque of Hyderabad.

CHUNDEE-MANDAPA. SANSK. From Chundee, the goddess Chundee, and Mandapa, a house. This is a kind of temple, with a flat roof. It is often erected by rich Hindus adjoining to their houses, and is designed for the image of Durga or Kali. It is built on four sides, with an area in the middle.—*Ward's Hindus*, ii, p. 3.

CHUNDEKIA or Soondekia. TAM. *Solanum pubescens*.

CHUNDEI, a tribe of Rajputs scattered in various parts of the N.W. Provinces, who came from Mahoba in Bundelkhand. Before the Mahomedan conquest, Mahoba appears to have been the capital of a principality that extended to the Narbadda, and included the province of Chunderi, which is called after their name. They are styled Sombansi, but they are not considered to be of pure descent, and their sons are carefully excluded from marriages with the higher clans. This tribe expelled the Baland tribe from Ajori, Burhur, and Mirzapur.—*Elliot*.

CHUNDELI, a very fine cotton fabric of India, so costly as to be used only in native courts. It is made from Berrar or Amraoti cotton. The chief care is bestowed on the preparation of the thread, which, when of very fine quality, sells for its weight in silver. The weavers work in a dark, underground room, the walls of which are kept purposely damp to prevent dust from flying about, Umraoti cotton is alone used.—*Elliot*.

CHUNDER KOOP, three hills in Las, of extremely light-coloured earth, which rise abruptly from the plain. The largest is 400 feet high, another about 200 feet, and the third is a broken cone. The last encloses a basin of liquid mud about 250 yards in circumference, in which the mud heaves and bubbles up continuously. They are called the basins of Raja Ram Chunder. The Koops are said to be altogether 18 in number, viz. seven in the neighbourhood of Kattayawara, and eleven between Kej and Gwaddel in Mekran.

CHUNDIGAR. GUJ. A bracelet maker; one who makes armlets of glass or ivory for married women.

CHUNDOO. HIND. Fried mince-meat.

CHUNDOO. HIND. A hanging lamp, made of bamboo framework covered with mica.

CHUNDOO LAL, a Khatri, who succeeded Mir Alam as Peshkar-i-Diwan, of the Hyderabad state. He was unsuccessful as a financier.

CHUNDRA, Soma, and Indu are epithets for the moon.

CHUNDRA or Chundraka. BENG. *Ophioxylon serpentinum*.

CHUNDRAGHERRI, a town and fortress 11 miles W.S.W. of the Hindu temple of Tripati, which seems to have been founded about A.D. 1490, by Narsing'ha, a raja of Vijayanagar of the Vaishnava sect. It was occupied as a seat of Government in 1570 by a successor, Timma raja, but in 1644 the ruling sovereign, Sri Ranga Rayel, who in 1640 had granted the site of Madras to the English, was driven from his throne by the Bijapur army, and in 1646 took refuge with a former feudatory at Bednore, and with him the last of the Vijayanagar dynasty disappeared.

CHUNDREE. HIND. A printed fabric of silk or cotton, made in Kutch, Kattayawar, and Gujerat. The design is stamped on the cloth, and is caught up and tied with a continuous thread, and the piece of cloth is then dyed of the wished-for colour.

CHUNDROOS. HIND. Copal resin. Fine shavings of it are used to stop hæmoptysis, made up into a medicine called 'Khairwa.' It is much used in varnishes.—*Gen. Med. Top.* p. 132.

CHUNDRUHASA. BENG. *Solanum ferox*. Chundru-moola, *Kæmpferia galanga*. Chundru mulika, *Pyrethrum* or *Chrysanthemum Indicum*.

CHUNDUN, Chandan, or Chandana, also Ghundasaru. DUKH. Sandal-wood. Saded chandan is sandal-wood. Lal-chandan is the red sanders wood, *Casalpinia sappan*.

CHUNDUNA SUN. HIND. *Corchorus olitorius*. Chundun-betoo, *Chenopodium album*. Chundun-moolce, *Urtica tuberosa*.

CHUNDUN HAR. HIND. A necklace, neck ornament.

CHUNDUS, a scented wood used for the mala or chaplets of Hindus.—*Tod's Rajasthan*.

CHUNDWASSA. Close to this place are the Buddhist caves of Dhumnar, with a Hindu temple behind. About 40 miles from Nemuch.

CHUNE. MALEAL. *Cathartocarpus fistula*.

CHUNERIA. HIND. An embroidered net fabric.

CHUNG. HIND. *Hordeum hexastichum*, also *Pyrus malus*; in Pangl and Chenab, *Boucerosia edulis*, also *Salix alba*, white willow.

CHUNG, a border race between Nepal and Sikkim. They are also called Limbu, Chung being the name given to them by the Lepcha. They are a hardy, hard-working tribe. They cultivate grain, and rear cows, pigs, and poultry. Their huts are made of split bamboo, and thatched with the leaves of the wild ginger and carlamoni, guyed down with rattans. They drink to excess.—*Latham*.

CHUNGAR, a wandering houseless race in the Panjab, probably the same as the Chinganeh of Turkey, the Italian Zingaro, the Spanish Gitano, and the English Gipsy. About Delhi the race is called Kunjur,—a word which, in the Panjab, properly implies a courtesan or dancing girl.

CHUNGHA, also Chun. HIND. *Euphorbia Royleana*.

CHUNGI. HIND. *Boucerosia aucheri*.

CHUNGI. HIND. A tax gathered daily from grain merchants, being as much grain as a man can hold in his hand.

CHUNG-PEH-LAH. CHIN. Wax insect.

CHUNGSAKHAGO, a pass in Kunawar leading from Chetka to Neilung, on the Jaukee or

Jannubee branch of the Ganges. It is a lofty pass, probably not under 18,000 feet.

CHUNG-TSEW. CHIN. The Chinese festival of middle autumn.

CHUNI-BADLI. HIND. A scarf of gold muslin.

CHUNNA, Bengal horse grain, *Cicer arietinum*.

CHUNNI-MARAM. TAM. *Acalypha betulin*.

CHUNNI-SAFAID. HIND. *Abrus precatorius* seeds.

CHUNSER. HIND. Cress, garden cress; *Lepidum sativum*.

CHUN-SHAW-CAP. CHIN. *Manis Javanica*.

CHUNUMEA, a tribe of Chanderbansi Rajputs in Jonpur, Azimgurh, and Gorakhpur.—*Elliot*.

CHUPAO. PERS. A foray; a charge of cavalry.

CHUPATHI or **Chapatti.** HIND. An unleavened wheaten cake. *Chapathi-ki bhaji*, *Marsilea quadrifolia*.

CHUPEIN. HIND. *Potamogeton gramineus*.

CHUPRA, the chief civil station of Sarun. It is on the left bank of the Ganges, in lat. 25° 45' N., and long. 84° 48' E., 30 miles above Patna, and 370 miles from Calcutta.

CHUPRI ALU. HIND. *Dioscorea globosa*; properly *Safri-alu*.—*Roxb.*

CHUPTA-LAC or **Chupta-lac.** HIND. Shell-lac.

CHUR. HIND. of Kishengunga. *Quercus ilex*.

CHUR, in the Panjab, the sweeper caste, many of whom have become followers of Nanak, and are commonly called Rungretha Sikh or Mazhabi Sikh. See *Chura*.

CHUR. HIND., BENG. Properly Chor. The shifting alluvial deposits of a great river are so called in Bengal.—*Yule's Embassy*, p. 26.

CHUR, one of the spurs of the Himalaya, 12,500 feet in height, composed chiefly of mica schist and clay-slate, with intrusive dykes or seams of granite. Boulders of the same rock are abundant in the valleys. The summit of the mountain is composed entirely of granite.—*Adams*.

CHUR or **Churi.** HIND. A crest, a top-knot, a tuft of hair.

CHUR. BALUCH. A small defile.

CHURA; Churi. HIND. A knife, a dagger.

CHURA, of the Panjab, are serfs. They are the direct descendants of the Chaura or military out-castes of the Mahabharata.—*W. W. Hunter*.

CHURA, a tributary state in Gujerat, with a population of 13,793 souls.

CHURA, a caste of sweepers; one of the Ghair Mulazim castes in a village.

CHURA. BENG. *Xyris indica*, *Linn.*

CHURA. HIND. *Commelyna Bengalisensis*; also *Angelica glauca*.

CHURA and **Tirah** are fertile and well-peopled valleys, enjoying a cool climate; and it was not unusual for the Peshawar sirdars and others, who had an understanding with the inhabitants, to pass the warm weather in the former of these places, which also frequently became a place of refuge to the distressed. At Chura resided Khan Bahadur Khan, Afridi, who attained immense influence amongst his tribe from the circumstance of his attendance at court during the sway of the Sadozai. Shah Shuja married one of his daughters, too, and on more than one occasion found an asylum with him.

CHURAL. HIND. *Lathyrus sativus*.

CHURANG or **Chor Ganga,** the founder of the Gangavansa dynasty of Orissa. His name is also written Saranga-deva. He invaded Orissa in A.D. 1131, and his dynasty ended with raja Narsinhdeo, who in 1217 built Kanarak, the Black Pagoda. Churang was a benefactor to Jagannath, adorned it, and peopled its neighbourhood.

CHURAYKAI. TAM. *Cucurbita lagenaria*.

CHUR-CHE, of early European travellers, are the Yu-che or Niu-che of the Chinese, the ancestors of the modern Manchus.

CHURGH, the female; Churghela or Churghlo, the male bird. Hunting hawks, natives of Cuthee, black-eyed; fastens on the antelope, and also kills the 'tuboor,' a kind of florikin.

CHURI. DUKH. A bird; hence Khan-churi, a house-sparrow. Churi-mar, a bird-catcher.

CHURI. HIND. Bracelets of glass, or lac, or metal. Chur, Chura, or Churi, the bracelet put on a newly-married bride, which she wears till widowhood. Churgar, ivory bracelet maker.

CHURIAL. HIND. *Aralia Cachemirica*.

CHURI KI BHAJI. DUKH. *Amarantus campestris*, *Linn.* Churi-saroch, *Artemisia scoparius*; also *Asparagus Punjabensis* and *A. elegans*.

CHURKA or **Charkha.** HIND. A cotton-cleaning jin. It is worked by two people. Two men working day and night can clean about 160 lbs. each.

CHURMA. MALEAL. *Phoenix dactylifera*.

CHURO. SIND. An unleavened cake of wheaten flour made into dough with clarified butter, and mixed with brown sugar; supposed, in Sind, to increase the delicacy of the skin.—*Burton's Scinde*.

CHURRA, a sanatorium on the N.E. frontier of India. The mean temperature at 4000 feet is about 66°, or 16° below that of Calcutta; which, allowing for 2½° of northing, gives 1° of temperature to every 290 to 300 feet of ascent. In summer the thermometer often rises to 88° and 90°; and in the winter, owing to the intense radiation, hoarfrost is frequent.—*Hooker, Him. Jour.* ii. p. 284.

CHURWA. HIND. Bruised rice.

CHUSAN ARCHIPELAGO, including the Kweshan group, is a large assemblage of islands near the mainland of China, between lat. 29° 20' and 31° N. The Kweshan group consists of 11 islands. Chusan island is 51½ miles in circumference, and the walled city of Ting-hae on the S. side of the island is upwards of one mile in circumference. The Chusan northern group consists of numerous islands, mostly barren or rocky. Chusan, the largest island, is the station of a sub-prefect, and, with the smaller neighbouring islands, forms a district called Ting-hae, the name by which it is always spoken of by the mandarins among themselves, and which it bears in all the works published by imperial authority.—*Horsb.; Meadows' Desultory Notes*, p. 89; *Murray's Indian Archipelago*, p. 150.

CHUSBAL. HIND. *Potamogeton crispus*.

CHUSHM-i-MAIDAH. PERS. The cat's eye gem.

CHUSHUL, a place in Ladakh where is a hot spring of a temperature of 96°. The waters are without taste or smell, but are said to have medicinal properties.

CHUSSAEE. HIND. Arango, GUJ. Large rough carnelian beads of various sizes and shapes, made in Cambay, and formerly extensively used in the African slave-trade.—*Faulkner*.

CHUSSUM. HIND. Waste silk.

CHUTI. HIND. *Asparagus Panjabensis*.

CHUTIA, the dominant race in Upper Assam when the Ahom race from the south swarmed into the valley. The Chutia kingdom was overturned by the Ahom chief Chutupha about A.D. 1350, and great numbers of the Chutia were deported and forced to settle in other parts of Assam, as in Chutia of the Durrung district; and still a great many of the Sadya and Upper Assam population are Chutias. The Bihya are of the same family, and, as a tribe of Lalong in Upper Assam, claim to be of Chutia descent. The Chutia, long before the appearance of the Ahom, had adopted Hindu customs. They are of a light olive complexion, but with a flatness of face and a want of sharpness in the features. The Deori Chutia are an isolated colony on the river Dihing in Luckimpur. Their language contains words used by the Garo and Bodo, but their origin is unknown. They profess Hinduism, but are considered to be a low caste.—*Dalton's Ethn. of Bengal*, p. 78.

CHUTIAL. HIND. Rheum emodi.

CHUTIALLI, a plain in Cutch Gandava.

CHUTIA NAGPUR, or Chota Nagpore, is a province in Bengal and the Central Provinces, lying between lat. $21^{\circ} 58' 30''$ and $24^{\circ} 45' N.$, and long. $83^{\circ} 22'$ and $87^{\circ} 15' E.$, with an area of 43,901 square miles, and a population in 1872 of 3,825,571 souls, two-thirds of them professing Hinduism, and upwards of a million following aboriginal faiths. The Kolarian and Dravidian aboriginal tribes number 230,034, the semi-Hinduized aborigines 101,849, and Hindus 71,749. Chutia Nagpur is on the eastern part of the extensive plateau of Central India, on which the Koel, the Subunreka, the Damuda, and other rivers have their sources. It extends into Sirguja, and forms what is called the Upar-ghat or Highland of Jashpur; and it is connected by a continuous chain of hills with the Vindhya and Kymor ranges, from which flow affluents of the Gauges, and with the highlands of Amarkantak, on which are the sources of the Narbadda. The plateau is, on the average, about 3000 feet above the level of the sea, with an area of about 7000 square miles. It is on all sides difficult of access; is a well wooded, undulating country, diversified by ranges of hills, and it has a genial climate. The non-Aryan tribes had fallen back to that refuge from the plains, more than half of them, however, being of the race known to Europeans as Kol; the other races in Chutia Nagpur and its adjoining tracts are the Larka Kol, Ho, Bhumi, Mundah, and Santal. The Kol in former times possessed the whole of Chutia Nagpur, which may now be said to be divided between them and the Dhangar or Oraon, who came from Rotasghur. The chief men in most of the villages are still, however, of the old Mundah or Kol tribe, and they do not intermarry with the Dhangar or Oraon. The greater part of Singbhum is inhabited by Kol, and they are numerous in Bamanghoty, and dispersed to the vicinities of Cuttack (Katak) and Midnapur. They are in a confused mass of flat-topped hills called pāt, capped with a horizontal layer of trap. It is arranged, for revenue and administrative purposes, into the districts of Hazaribagh, Lohardaga, Singbhum, Manbhum, and the seven small tributary states designated the Chutia Nagpur mahals are Bonai, Chang Bahar, Gangpur, Jashpur, Korea,

Sirguja, and Udaipur. The chiefs are tributary. The races have a strong belief in witchcraft.—*Imp. Gaz.; Dalton's Ethnology*.

CHUTKA. BENG. *Baulinia neuminata*.

CHUTNEE is a warm condiment used in every family of India, either prepared fresh daily from ripe vegetables, or preserved. The following is a recipe for the Delhi or celestial chutnee:—Take of green mangoes, raisins, mustard-seed, salt, green ginger, and garlic, each one seer; onions (none or) half a seer; dried red chillies, half to one seer; moist or soft sugar, one to two seers; white wine vinegar, four bottles. The ginger, garlic, and onions are to be peeled, and, together with the chillies, are to be cut into thin slices previously to being pounded; the mustard-seed to be washed and dried, then gently bruised and winnowed; the raisins to be washed and freed from the stones; the sugar to be made into a thick syrup; the mangoes to be picked of their rinds, cut into thin slices (some boil them in three bottles of the vinegar, adding the fourth when mixing them up with the other ingredients) and pounded; the remaining articles are to be separately pounded, and then the whole is to be incorporated, put into a stone jar, well closed, and placed in the sun for a month or two. If put into a glass bottle, it should occasionally be put out in the sun. It will keep good for years.

Love-apple Chutnee. Take the love-apple (*Solanum lycopersicum*, *Lin.*), a large plateful, the rinds and seed to be rejected, and only the pulp used; dried salt fish cut very fine (as if rasped), a piece about two inches square; six onions cut into thin longitudinal slices; eighteen green chillies chopped fine; dried tamarind, two pice weight (or one ounce), mashed up in about three or four ounces of water (stones and fibres to be rejected); salt, a teaspoonful; ghi or butter, five pice weight (or two ounces and a half). First put the ghi into a tinned copper vessel placed on the fire; when it is melted, add the onions; and as the latter begin to assume a reddish hue, add the chillies, stirring them well for five minutes. Then add the salt fish, and continue stirring the whole; when the ghi has nearly evaporated, add the love-apple, and stir it about for a good while. Lastly, add the tamarind water and salt, and mix the composition well until it acquires a pretty dry consistence (like that of brinjal chutnee or sambal). This chutnee is only for immediate use, and will not keep above a day or two.

CHUTOOR-ANANA. SANSK. Four-faced; from Chutoor, four, and Anana, a face.

CHUTSALEE. TIBET. Coarse borax from Ruthog. Chuwa Sirsa, first-class barilla or saggi.

CHUTSAO. CHIN. Ganjah.

CHUTTUR. BENG. Lands cleared for salt-making, a salt field.

CHUYAR, a hill tribe in the range bordering Bengal on the west, in Raungurh and the neighbouring districts.—*Wilson*.

CHU-YU. CHIN. Yam.

CHYAVANA, in Hindu mythology, is the son of Bhriga, the son of Brahma, by his wife Puloma. A Rakshasa, or fiend, attempting to carry off Puloma, the child was prematurely born, whence his name, from Chya, to fall from. Upon his birth, his splendour was such as to reduce the insulter of his mother to ashes. Having adopted a life of ascetic devotion, he was so immersed in

abstraction, that he became completely covered with the nests of white ants. Sukanya, daughter of king Sariyati, wandering in the forest, observed what she thought two lights in an anthill, and thrust in two blades of kusa grass, which, when withdrawn, were followed by a flow of blood. Much alarmed, the princess repaired to her father and related what had happened. The king, conjecturing the truth, immediately went to the spot to deprecate the wrath of the rishi, and pacified him by giving him the damsel in marriage. After being married some time, the Aswini Kumara, passing by Chyavana's residence, conferred upon him youth and beauty, in requital of which boons he gave them a share in the soma juice offered at sacrifices to the gods. The gods, with Indra at their head, opposed this grant, and Indra lifted up his hand to strike Chyavana dead with his thunderbolt, when the sage paralyzed his arm. To appease the gods, he created the demon Mada, intoxication personified, in terror of whom and of the power of the saint, the gods acceded to the participation of the Aswini Kumara in divine honours. Indra was restored to the use of his arm, and Mada was divided and distributed amongst dice, women, and wine.—*Bhuvishyat Purana and the Dana Dharma section of the Mahabharat*, p. 263.

CHYCHM. EGYPT. Cassia absus.

CHYEBASSA, the chief station of Singbhum.

CIANDU or Xanadu, a place in China 150 miles beyond the Great Wall, and ten days' journey from Peking. It was called Che-min-fu, or by the Tartars Kai-min-fu. It was noticed by Marco Polo, as there stood that magnificent park and palace of the Tartar ruler of China, the great Kablai Khan, the description of which set Coleridge a-dreaming (or dreaming that he dreamt) that wonderful poem which tells how

'In Xanadu did Kublai Khan
A spacious pleasure dome decree.'

A later traveller mentioned how this lord passed the summer at a certain place which is called Sandu, situated towards the north, and the coolest habitation in the world.—*Yule, Cathay*, i. p. 134.

CICCA DISTICHA. Linn.

Phyllanthus longifolius, R. | Avertroha acida, Linn.

Nuri, Nubari, . . . BENG.	Harfari, . . . HIND.
Cheramella, . . . "	Chirimi, Cheremin, MALAY.
Hurriphal, Nubi, . . . "	Nelli, . . . MALEAL.
Them-bau-h'soke-gyee, . . . BURM.	Cherambola, . . . PORT.
Country gooseberry, ENG.	Rata nelli, . . . SINGH.
Otaheite, . . . "	Arunelli, . . . TAM., TEL.
Chelmeri, . . . HIND.	Racha usirike, . . . "

A small tree, leaves pinnate, from one to two feet long, scattered about the ends of the branches. Its flowers small, and of a reddish colour. It is commonly cultivated in the gardens of India, all over the Tenasserim Provinces, and is planted by the Burmese, who value its fruit highly. It bears some resemblance to a gooseberry both in appearance and taste, and yields a roundish subacid fruit about the size of a large marble. The fruit is largely used as an article of food, raw or cooked, or in pickles or preserves. Leaves are sudorific, and seeds cathartic. Wood inferior.—*Roxb.* iii. 672; *Ainslie*, 222; *O'Sh.* 551; *Mason*.

CICENDIA HYSSOPIFOLIA. Adans.

Gentiana hyssopifolia, L.	Gentiana verticillata, L.
Eraum hyssopifolium, Willd.	Slevogtia verticillata, D.
Adenema hyssopifolia, Don.	Don.
	Hippion hyssopifolium, Spreng.

Karaita, BENG.	Valla rugu, TAM.
Charaita, HIND.	Nellaguli, Golimidi, TEL.
Chota charaita, "	

This plant is common in various parts of Southern India, as at the mouth of the Adyar river in the environs of Madras. The whole plant is bitter, and much used by the natives as a stomachic, being also somewhat laxative. It is used as one of the Chiretta plants.—*O'Sh.* p. 460; *Cleghorn*.

CICER ARIETINUM. Linn. Chick-pea.

Himis, Humuz, . . . ARAB.	Channa, HIND.
Chunnai, But-kale, BENG.	Cece, IT.
Chunna, Batoola, . . . "	Nakhud, PANJ.
Ku-lo-pai, BURM.	Chola, PERR.
Kadalay, TAM.	Cheunaka, SANSK.
Harbarah, DUKH.	Garvanzos, SP.
Homos, EGYPT.	Sanaga, Sanagaloo, TEL.
Bengal gram, ENG.	Chanaka, "
Chenna, GUJ.	Hari-mandhakamu, "

This valuable pulse is much prized in India, and in the more northern provinces of Hindustan, where it is common. The natives use it, parched and ground, mixed with wheat flour. Split with the hand-mill and steeped, it forms there the principal food of horses and all cattle. These, and barley roasted and ground, form a mixture called suttoo, given to horses. Each pod contains a single pea. Col. Sykes counted 179 seeds on one plant. When parched it tastes not unlike the roasted cashew nut, and is often used by the people of Northern India for food. Its composition per cent. is,—moisture, 10.80; starchy matter, 62.20; nitrogenous, 19.32; fatty or oily matter, 4.56; mineral constituents (ash), 3.12. It constitutes, after wheat, the chief food of the lower class in Spain. It is grown extensively by the Burmese, especially in Burma. The fresh plant has an acid reaction; and if clothes are placed in a field of it in the dewy morning, and then wrung out, they give an acid infusion.—*Powell; Roxb.; O'Sh.; Ainslie; Mason.* See Chuna.

CICORIUM INTYBUS. Linn. Chicory.

Shikoriah, ARAB.	Kichorion, GR.
Suchal-band, CHENAB.	Kasni (seeds), HIND.
Ku-tsai, Ku-ku, CHIN.	Hinduba, "
Ku-mai-tsai, Tu, "	Hand-gul, KACHAN.
Chicory, ENG.	

Two varieties of this are grown in many parts of India, from Cape Comorin to the Himalaya. Wild chicory vegetates luxuriantly during the summer in Kashmir, and in the Panjab during the cold season. It grows there up to 5500 feet, and in Lahoul up to 9500 feet; and the young plant is used as a vegetable. The seeds are used in medicine, and are consequently kept in the bazars. Seeds of both varieties appear to be officinal, being considered carminative and cordial. The root also is used medicinally. The roots contain nitrate and sulphate of potash, mucilage, and some bitter extractive principle. An infusion of chicory mixed with syrup causes a thickening of the liquid. The root, Bekh Kasni, HIND., is used as a tonic and demulcent in fever and dyspepsia, and is largely used to adulterate coffee in England. This and C. endivia are raised and eaten by the Chinese as pot herbs.—*Honigberger*, p. 25; *J. L. Stewart, M.D.*, p. 408; *Smith*.

CICINDELIDÆ, a family of the Coleoptera. The genera common in India are *Therates*, *Tricondyla*, and *Colliuris*; the two former are characteristic of a southern range, while the latter is abundant throughout the eastern continent. The most splendid of the race abound in Nepal. Cicindela

heros and *C. gloriosa* also occur, the latter of a rich velvety green colour.

CICONIA, a genus of birds of the order Grallatores. *Ciconia alba*, the white stork, occurs in Europe, Asia, North Africa; is migratory, and is common in India during the cold season in immense flocks in Lower Bengal. *Ciconia nigra*, or black stork of Europe, Asia, North Africa, is not uncommon in India.

CICUTA VIROSA. Royle.

Kau-pen, . . . CHIN. | Zahri gugal, . . . KASH.
Devil's salep, . . . ENG. | Salep-i-shaitan, . . . PERS.
Poison turnip, . . . "

Occurs in Kashmir.—*Royle*, p. 426. See Conium. CID of Spain, the Arabic term Sayyad, lord, by which all the descendants of Mahomed are styled. It was bestowed as an honorific distinction on a brave Christian knight, who opposed the Mahomedans in Spain.

CIDER or Cyder, the wine of the apple. It is made in Britain, on the continent of Europe, and in the United States. There was a manufacture of cider by the maharaja of Kashmir upon a large scale.—*Faulkner*; *M'Culloch*.

CIGARS.

Chutta, . . . HIND. | Shruttu, . . . TAM.
Rokok, . . . MALEAL. | Tsutta, . . . TEL.

Cigars are made all over the south and east of Asia, but the most celebrated are those of Manilla, of Chinsurah in Bengal, of the islands or Lunka of the Godavery, of Trichinopoly, and of Dindigul, in the peninsula of India.

CIMERII, Cimbri, or Camri, a Getic race, who entered Europe from Asia. Herodotus (*Melpomene*, p. 190) says the Cimmerians, expelled by the Massagetæ, migrated to the Crimea. Here were the Thyssagetæ or western Getæ; and thence both the Getæ and Cimbri found their way to the Baltic. Rubruquis, the Jesuit traveller, describing the monuments of the Comani in the Dasht-i-Kipchak, whence these tribes came, says 'their monuments and circles of stones are like the Celtic or Druidical remains of Europe.'—*Bell*.

CINCHONA, a genus of plants of the order Cinchonaceæ, natives of South America. Joseph de Jussieu, in his history of Peru, relates that in 1600 a Jesuit, who had a fever at Malacotas, was cured by Peruvian bark. In 1638 the Countess Anna of Chinchon was suffering from tertian fever and ague at Lima, whither she had accompanied the viceroy, her husband. The corregidor of Loxa, Don Juan Lopez de Canizaries, sent a parcel of powdered quinquina bark to her physician, Jua de Vega, assuring him that it was a sovereign and infallible remedy for tertiana. It was administered to the countess, who was 62 years of age, and effected a complete cure. This countess, returning with her husband to Spain in 1640, brought with her a quantity of the healing bark. Hence it was sometimes called 'countess' bark' and 'countess' powder; and Linnaeus, long after, named the whole genus of quinine-bearing trees, in her honour, Chinchona. By modern writers the first h has usually been dropped, and the word is now almost invariably spelled in that way, instead of the more etymological Chinchona. The Jesuits afterwards made great and effective use of it in their missionary expeditions, and it was a ludicrous result of their patronage, that its use should have been for a long time opposed by Protestants and favoured by Catholics. In 1679,

Louis XIV. bought the secret of preparing quinquina from Sir Robert Talbot, an English doctor, for 2000 louis-d'or, a large pension, and a title. Under the Grand Monarch it was used at dessert, mingled with Spanish wine.

The British, in British India, Ceylon, and Burma, and the Dutch in Java, have successfully introduced several of the species,—at Neddiwat-tam, Pykara, Kalhatti, and Ootacamund, in many private plantations, also in Wynad, in the Bababooden, and hills of Biligiri Rangam; also in Ceylon; also at Darjiling, in the Doons of the N.W. Provinces, and in Sikkim; and the Travancore Government has likewise aided in their diffusion, by selling seed and seedlings; also in Burma it has been planted near Tounghoo, at Than-toung-gyee in the Sitang division; likewise on the Khassya hills. The better known species are *C. Boliviana*, *calisaya*, *condaminea*, *cordifolia*, *lancifolia*, *lucumæfolia*, *magnifolia*, *micrantha*, *nitida*, *oblongifolia*, *officialis*, *ovata*, *Pahudiana*, *Peruviana*, *purpurea*, *succirubra*, and *scrobiculata*.

The commercially valuable species are,—

- C. officialis*, var. α . *condaminea*, var. β . *bonplandiana*, var. γ . *crispa*, crown bark; of Loxa region.
C. succirubra, *Pavon*, red bark; west slopes of Chimborazo.
C. Pitayensis, etc., *C. lancifolia*, *C. cordifolia*, Colombian bark; Colombian region.
C. nitida, *C. micrantha*, *C. Peruviana*, grey barks; of Huanuco region in North Peru.
C. calisaya, yellow bark; in Bolivia and South Peru.

Cinchona calisaya bark, of the best kinds, of South America, yields, on the average, 3·8 per cent. of quinine. That of the variety *C. Josephiana*, 5·2 per cent. One variety, grown in Java from seeds transmitted by Mr. Ledger, yields nearly 10 per cent. of quinine; but in Java and Ceylon 13 per cent. of quinine has been obtained, and from Ledgeriana plants grown on the Neigherries, 11 per cent.; and it is recognised that the yield of the plants is the sole guide in planting. The treatment of the trees, by barking, mossing, and shaving their bark, adds greatly to their yield of quinine. Up to 1880, the quantity of quinine imported into British India was about 10,000 lbs., value about £40,000. In Madras there have been the following gratifying comparisons between expenditure and revenue:—

Year.	Expenditure.	Revenue.	Profit.
1876-77, .	Rs. 1,18,742	1,18,960	218
1877-78, .	1,34,228	3,71,071	1,36,843
1878-79, .	1,44,179	4,30,908	2,86,729
1879-80, .	1,56,708	4,89,731	3,33,023

Cinchona barks imported into London from June 1879 to June 1880 amounted to 6,002,330 lbs. from Colombia, and 959,030 lbs. from all other parts of South America. India and Ceylon, 1,172,060 lbs.; Java (to Amsterdam), 70,088 lbs.; Jamaica, 21,140 lbs. In September 1882, at a sale of barks from the Madras Government plantations, the following table shows the prices realized as compared with those of the sale on 11th Jan. :—

Description of Bark.	Weight of bales—lbs.	Jan. 11. Rs.	Sept. 4. Rs.
Mossed crown, .	104 to 108	343 to 345	353 to 360
Natural, . .	102 to 107	243	245 to 267
Branch, . .	104 to 111	average	60
Natural red, .	102	111 to 120	121 to 126
			bale of 100lb.
Mossed red, .	100	147 to 151	158 to 182
Do. . .	102	none	170 to 172
Branch red, .	102	73	73
Do. . .	102	81½	80

CINCHONA.

CINCHONA.

In 1881, in Ceylon, almost all estates had trees planted along road-sides, or in the midst of the coffee, or in places where the coffee trees had died out; but in other estates almost the whole acreage had been planted with them, in regular rows between the lines of coffee. They are said to grow in the Yatiyantota district on the western slope, at 500 feet; and at Kalutura, about 30 miles S. of Colombo, nearly at the sea level. The number of cinchona plants growing in Ceylon at the beginning of 1881 was estimated in Fergusson's Handbook at from 50,000,000 to 100,000,000. *C. succirubra* was the most numerous, being reckoned at more than one half. The remainder consists of *C. officinalis* and *C. calisaya*, with such varieties as *C. Ledgeriana* and *C. pubescens*. The export from Ceylon of cinchona bark for the eleven years 1869 and 1871 to 1880, shows an increase from 28 oz., value Rs. 50, in 1869, to 1,161,989 lbs. in 1880, value Rs. 12,00,000 :—

1869, . . . 28 oz.,	Value, Rs. 50
1871, . . . 80 packages,	313
1872, . . . 11,547 lbs. and 694 packages,	64,102
1873, . . . 44,836 „	32,667
1874, . . . 40,354 „	25,277
1875, . . . 19,152 „	17,963
1876, . . . 14,932 „ and 1 package,	14,720
1877, . . . 72,127 „ and 1 „	88,738

Statement showing the Out-turn and Disposal of Cinchona Bark at the Government Plantations in India during each of the official years 1876-77 to 1881-82.

Neilgherry Plantations.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
Out-turn of bark collected during the year.	103,341lbs.	138,808lbs.	114,320lbs.	179,299lbs.	243,245lbs.	242,052lbs.
Exported for sale in England,	88,708	146,632	105,101	173,539	235,527	232,467
Issued to Madras Medical Department, . . . . .	...	4,330	3,511	2,000	...	...
„ Calcutta, . . . . .	...	...	100	...	...	...
„ Bombay,	952	1,000	1,500	2,000	2,000	1,000
„ Private parties, . . . . .	...	...	...	20	5,096	10,278
Total,	89,660lbs.	151,962lbs.	110,212lbs.	177,559lbs.	242,623lbs.	243,745lbs.

Statement showing the Expenditure, Produce, and Receipts at the Government Cinchona Plantations in India for each of the official years 1876-77 to 1881-82.

Total expenditure,	Rs. 59,630	Rs. 69,771	Rs. 73,682	Rs. 79,724	Rs. 96,105	Rs. 1,12,392
Produce in bark,	103,341lbs.	138,808lbs.	114,320lbs.	179,299lbs.	243,245lbs.	242,052lbs.
Rate per lb. realized by sale,	Rs. 1'10'8	Rs. 3'13'5	Rs. 2'9'5	Rs. 3'0'0	Rs. 2'8'0	Unknown.
Receipts by sales in England,	Rs. 1,05,974	Rs. 3,41,272	Rs. 3,79,789	Rs. 3,21,963	Rs. 4,06,000	Unknown.
Miscellaneous local receipts,	4,483	17,479	20,564	21,852	26,200	Rs. 24,844
Total,	Rs. 1,10,457	Rs. 3,58,751	Rs. 4,00,353	Rs. 3,43,815	Rs. 4,32,200	Rs. 24,844

In the year 1880-81 the cinchona factory at Darjiling disposed of 8600 lbs. of febrifuge; the plantation harvested a crop of 348,560 lbs. of bark. The earnings for the year amount to 80,290 rupees, representing a dividend of 8 per cent. on the capital of the plantation; exclusive of the saving which Government derive from substituting the febrifuge for quinine in public hospitals and dispensaries. This saving Dr. King estimated at 4½ lakhs for the year,—almost the value of half the capital expenditure on the plantation. The Government encouraged competition by their free sale of seed; and in 1879-80 as much as 1711 lbs. of seed were distributed. They had 847 acres under cultivation; and at the end of 1879-80 there were 677,350 plants in permanent plantation. The people of India owe a deep debt of gratitude to Mr. Clements Markham for bringing cinchona to them, and they should exercise it while

1878, . . . 186,797 lbs.	Value, Rs. 1,71,292
1879, . . . 507,368 „	5,19,086
1880, . . . 1,161,989 „	(say) 12,00,000

The organic constituents of cinchona barks are,—quina, chinchonia, aricina, quinidia, chinchonidia, quinic, tannic, and quinovic acids, chinchona red, etc.; in medicinal forms, quinine, chinchonidine, quinidine, chinconine. The quill bark stripped from saplings, just as cinnamon is prepared, is found to be rich in quinine. The bark that is obtained at Sikkim is all made into a febrifuge in a factory on the estate. This febrifuge is said to be quite as efficacious as quinine, and it is much cheaper, and very easily made. The cost is Rs. 9'3'10½ per lb., or about 9 annas per ounce.

On the Neilgherries, nearly every species has been planted in the several plantations, the preference being given to *C. succirubra*, *C. officinalis*, and *C. pubescens*. *C. lanceolata* was also cultivated during 1877-80. *Succirubra* and *officinalis* were the best of the available kinds for cultivation upon the high Neilgherry plantations. On 31st March 1882, there were 183,498 *C. succirubra* and 551,307 *C. officinalis* plants in permanent plantation, 552 plants of *Ledgeriana*, 1874 of *C. micrantha*, 44 of *Pitayensis*, 9613 of 'hybrids and others;' only 8 left of 120 *C. Carthagena*, and 5 of 15 *C. Santa Fé* plants raised early this year.

he still lives. It is one of the largest boons conferred on India and its people. He went and resided in South America. He published (1862) his travels in Peru and India, while superintending the collection of cinchona plants and seeds; and in 1880 his 'Peruvian Bark' gave a popular account of the introduction of cinchona cultivation into British India.

Cinchona calisaya is found to be a very variable species in Sikkim; and its variations are not confined to the form of leaves and flowers, but extend also to the chemical constitution of the bark, some of the varieties grown in Sikkim containing nearly eight per cent. of pure quinine, while the bark of others yields very little of quinine or of any other useful alkaloid. But the differences in external form and of richness in alkaloid are not related to each other in any very definite way; and trees, of which the leaves and flowers are so

much alike as to be undistinguishable from dried specimens, have been found to yield bark of quite different chemical composition. In Java the Dutch have a variety of calisaya, the bark of which is richer in quinine than any bark ever imported from South America; some of the Dutch samples having yielded on analysis the extraordinary amount of 13·7 per cent. of quinine. They had been raised from a parcel of seed purchased in 1866 by the Dutch Government from Mr. Ledger. Mr. Ledger got them from a half-caste, who would not tell where he collected them, and who was murdered soon after; the exact locality in Bolivia where they were gathered, therefore, remains unknown. Mr. Ledger's seed produced 6300 trees, which have since been largely propagated from. The 6300 plants all agree in being rather shabby-looking trees, averaging in height 25 feet, and girthing at 6 feet from the ground 27 inches. They have tall stems, and rather small, lax, conical heads, the branches of which are more or less distinctly arranged in tiers. The cinchonas under favourable circumstances become large trees, and have the handsomest foliage of the forest. The leaves are lanceolate, glossy, and vividly green, traversed by rich crimson veins; the flowers hang in clustering pellicles like lilacs, of deep rose-colour, and fill the vicinity with rich perfume. Nineteen varieties of cinchona were established by Dr. Weddell. The cascarilleros of S. America divide the species into a category of colours, according to the tinge of the bark; there are yellow, red, orange, violet, grey, and white cinchonas. The yellow, among which figure the *Cinchona calisaya*, *lanceifolia*, *condaminea*, *micrantha*, *pubescens*, etc., are placed in the first rank; the red, orange, and grey are less esteemed. This arrangement is in proportion to the abundance of the alkaloid quinine, used in medicine instead of the bark itself. The following prices have been realized in London:—

- C. succirubra*, red bark, 2s. 6d. to 8s. 6d. per lb.
- C. calisaya*, *C. frutex*, *C. vera*, yellow bark, 2s. 10d. to 7s. per lb.
- C. officinalis*, var. (a) *Uritingsa*, Loxa bark, var. (b) *Condaminea*, select crown bark, 2s. 10d. to 7s.
- C. crispata*, fine crown bark, 2s. 10d. to 6s.
- C. nitida*, genuine grey bark, 1s. 8d. to 2s. 9d.
- C. sp.* undetermined, fine grey bark, 1s. 8d. to 2s. 10d.
- C. micrantha*, grey bark, 1s. 8d. to 2s. 9d.
- C. Peruviana*, finest grey bark, 1s. 8d. to 2s. 10d.
- C. pabudiana*.

Plants of the *C. Ledgeriana* from Java have been sold at 500 rupees a thousand; and price for seed paid for this variety, £226 per ounce. This seed was taken from trees of a superior kind, of a good age, the bark of which had been tested, and the firm advertised the seed in Java. The 1880–81 crop of Madras amounted to 250,271 lbs., against 183,984 lbs. in 1879–80. 234,736 lbs. were supplied to the home market, 5096 lbs. to a firm in Madras, and 2000 lbs. to the Bombay Medical Department, leaving a balance of 8439 lbs. in store. Experiments are still (1882) being made to determine the merits of the grassing and mossing systems. Low-country coolies were employed as labourers with success.

Cinchona calisaya, Ruiz. and Pavon., grows on the Andes of Peru, New Granada, and Bolivia, at 5000 to 6000 feet above the sea. It attains a height of 40 feet. It yields the yellow bark, also part of the crown bark. It is one of the richest

yielders of quinine, and produces, besides, cinchonidine, but yields little of other alkaloids. Its varieties do not all furnish bark of equal value. It grows under conditions more limited than those of *C. succirubra*, and it is not so easily propagated. The Santa Fé variety ascends the Andes of New Granada up to 10,000 feet, and produces the highly valuable soft Colombia bark.

Cinchona cordifolia, Mutis., grows on the Andes of Peru and New Granada, at between 6000 and 8000 feet elevation, and yields the hard Cartagena bark, or West Pitaya bark, one extremely rich in alkaloids. It is hardy, grows with rapidity and vigour. The thickest bark is obtained in the highest altitudes, where it has the action of misty clouds.

Cinchona hasskarliana, Miq. In Java, some of the best results were obtained from this species, as yet not critically identified.

Cinchona lanceifolia, Mutis., considered by Weddell a variety of *C. officinalis*. It grows in places where the mean annual temperature is that of Rome, with, however, less extremes of heat and cold. It yields part of the Pitaya bark of commerce.

Cinchona micrantha, Ruiz. and Pavon., grows on the Cordilleras of Bolivia and Peru to a height of 60 feet, and from it part of the grey and of the Huanuco bark as well Lima bark are obtained. It is comparatively rich in cinchonine and quinidine, and also contains quinine.

Cinchona nitida, Ruiz. and Pavon., grows in the Andes of Peru and Ecuador to a height of 80 feet, and yields part of the grey and Huanuco bark, also the Lima bark. It contains predominantly cinchonine and quinidine.

Cinchona officinalis, Lindl., is partly *C. condaminea*, Humboldt. It grows on the Andes of New Granada and Peru, at a height of 6000 to 10,000 feet, and yields the crown or brown Peruvian bark, besides part of Loxa bark. It is comparatively rich in quinine and cinchonidine. Superabundance of moisture is particularly pernicious to this species. The temperature of the middle regions of the Andes where this tree grows is almost the same as that of the Canary Islands. The *crispata* variety endures a temperature occasionally as low as 27° Fahr.

Cinchona pitayensis must also be referred to *C. officinalis* as a variety. It attains a height of 60 feet, and furnishes also a portion of the Pitaya bark. In Upper India it has yielded in some instances the unprecedented quantity of 11 per cent. alkaloids, nearly 6 per cent. quinine, the rest quinidine and cinchonine. This plant is now annihilated for bark purposes in its native forests.

Cinchona succirubra, Pavon., a tree of the mid-Andes regions of Peru and Ecuador, yielding the red Peruvian bark, rich in quinine and cinchonidine. It attains a height of 40 feet. It is this species which is most largely cultivated in the mountains of Bengal. This has proved the hardest species in Sikkim; it grows under a wide range of conditions, and seeds freely; all its varieties produce bark of great value, yielding an average of 4 per cent. of alkaloids. Beetles (a male stag-beetle, family Lucanidae) have been found feeding on the renewed bark (after shaving) of *succirubra* trees in Maskeliya. The female has much shorter mandibles, and is said to use them in forming a hole in the trunks of trees for the reception of its

eggs. Westwood says (i. p. 187) the perfect insect feeds on the honey-dew upon the leaves of the oak; they also feed upon the sap exuding from the wounds of trees, which they lap up with their finely ciliated maxillæ and lower lip. It has been supposed that the larva of this insect, which chiefly hides in the willow and oak, remaining in that state several years, is the animal so much esteemed by the Romans as a delicacy, and named cossus. The injury which it causes is often very considerable, boring not only into the solid wood, but also into the roots of the tree. The stag-beetle found in Maskeliya was a male, with immense mandibles, and greatly resembles *Lucanus cervus*, the common stag-beetle of Europe.—*Observer, Ceylon; Von Mueller.*

CINCHONACEÆ, the coffee tribe of plants, of which there are 233 genera and 870 species. Of these, 729 species are known to occur in the south and east of Asia, viz. in Zanzibar, Timor, Persia, Japan, each three; in Arabia four, and in India 695.

CINNABAR.

Zunjefer,	ARAB.	Guluga,	MALAY.
Shwui-yin, Tan-sha, CHIN.		Sedilengam,	MALEAL.
Chu-sha, Shin-sha,	PERS.	Shangarf,	
Hung,		Inghulum,	SANAK.
Pak Shangharf,	DUKH.	Shudilingam,	TAM.
Hingla, Hingra,	HIND.	Inghilikam,	TAM., TEL.
Durdar, Hingur,			

This is found in commerce, native and manufactured. It is the red or bi-sulphuret of mercury. The best native cinnabar is red, heavy, brilliant, of a high colour, and free from earthy or stony matter. It is found in various places, chiefly in quicksilver mines, being one of the ores of that metal. It occurs native in China abundantly in Shen-ai; and all the quicksilver (shwin yin, water silver, i.e. hydrargyrum) not imported into China is there obtained from this ore, by a rude process of burning brushwood in the wells, and then collecting the metal after condensation. Cinnabar is brought from the mines of China in the form of a coarse shining powder, with a varying depth of red colour. The finest is used as a pigment, and in making red lacquer for varnishing. Cinnabar has been discovered at Bassein, in Borneo, in a mountain range called Bungo, extending between two branches of the Sarawak river. It yields 84 per cent. of quicksilver. For making artificial cinnabar, when two parts of mercury and one of sulphur are triturated together, the mercury gradually disappears, and the whole assumes the form of a black powder. When this is heated red hot, it sublimes, and if a proper vessel be placed to receive it, a cake is obtained of a fine red colour, which, when reduced to a fine powder, is known by the name of vermilion. Artificial cinnabar is largely manufactured in Calcutta, and in small quantities at Surat. It has been employed in medicine by the Hindus from time immemorial, to salivate their patients, causing them to inhale its fumes. Cinnabar is entirely volatile from a slip of tale, while the impurities remain behind. Compound cinnabar ointment is Captain Aitkin's useful ringworm ointment.—*Williams' Middle Kingdom; Mason; Beng. Phar.; Thomson's Chemistry.*

CINNAMOMUM, a genus of plants belonging to the natural order Lauraceæ, confined to Eastern and Southern Asia. The species are—

albiflorum, Nepal.
aromaticum, of China.
camphora, China, Japan.
caudatum, Nepal.
culitlawan, Moluccas,
Cochin-China.
cassia, S. China.
dubium, Ceylon.
dulce, China.
eucalyptoides, Malabar.

CINNAMOMUM ALBIFLORUM. *Nees.*

C. camphoratum, Bl.
C. tamala, F. Nees.

inera, Peninsula of India,
Malayana.
multiflorum, of Ceylon.
nitidum, Sumatra.
obtusifolium, of Ceylon.
ovalifolium, of Ceylon.
pauciflorum, of Sylhet.
recurvatum, China.
villosum, Ceylon.
Zeylanicum, Ceylon.

Laurus cassia, *Roeb.*

Dalchini, Tajkalmi, HIND. | Tez-bal, Tejpat, HIND.

This tree grows in Tiperah, Nepal, Kumaon, and the Panjab; is not uncommon in the Himalaya east of the Sutlej; grows sparingly at about 5000 feet as far as the Ravi, and probably in Hazara. Part at least of the officinal bark and leaves are probably derived from this tree. The former is given for gonorrhœa, and the latter are used in rheumatism, being considered stimulant. Its timber does not appear to be valued.—*Voigt; Stewart; Pocell.*

CINNAMOMUM AROMATICUM. *Nees.*

C. cassia, Blume.

Laurus cassia, Nees, t. 3. | *Laurus cinnamomum,*

Audr. Rept.

A tree of considerable size, said to grow in the dry sandy districts lying N.W. of the town of Fai-foe, between lat. 15° and 16° N. It is said to produce the cinnamon of China and Cochin-China, as also cassia bark and the aromatic fruits called cassia buds.—*Royle; Wight; Voigt.*

CINNAMOMUM CITRIDORUM. *Thw.*

Pangaree Kurundu gnas, SINGIL. A tree of Ceylon, growing to a height of 20 or 30 feet in the Sufrugam district, at an elevation of 1000 to 2000 feet. It is distinguished by the venation of its leaves, and by the truncated cup of the fruit. The bark has much of the odour of citronella oil, intermixed with something of the fragrance of common cinnamon.—*Thw. Zeyl. p. 253.*

CINNAMOMUM CULITLAWAN. *Nees.*

Laurus culitlawan, Roeb. | *Cortex caryophyllodes,*
L. caryophyllus, Lour. | *Rumph.*

A native of Amboyna, especially in Leitimoo, near the villages of Sava Rutton and Ena. It also grows in Cochin-China. The bark when dry is aromatic like cloves, but less pungent and sweeter. It has some astringency, and owes its medicinal activity to a combination of volatile oil, resin, and bitter extractive. It is used in dyspeptic complaints, diarrhœa, etc. The natives of Amboyna use the oil in both as an internal medicine and as a stimulating liniment.—*Roeb. iii. p. 299; Voigt; Eng. Cyc.*

CINNAMOMUM DULCE. *Nees.*

C. Chinensis, Bl. | *Laurus dulcis, Roeb.*

A small tree of China, leaves and bark of a sweet aromatic taste and odour.—*Roeb. ii. 203.*

CINNAMOMUM EUCALYPTOIDES. *Nees.*

Grows on the mountains of Malabar. Its leaves have a strong acrid clove-like odour, and taste somewhat tinged with camphor. It is the *Laurus Malabatharica*. 'Sapor et odor foliorum fortis et acris caryophyllorum cum levi camphoræ tinctura.'—*Nees; Voigt; Roeb.; Wall. Cat.*

CINNAMOMUM INERS. *Reinw.*

C. nitidum, Hooker.
C. eucalyptoides, Nees.

C. Rauwolfii, Blume.
C. carna, Rheede.

Theet-kyam-bo, BURM.

Ran-dal chini, MAHR.

Len-kyau,

Kat-kurus, MALKAL.

Kaddoo-lavanga, CAN.

Sembela; Puli pilla, TAM.

Dur-chini, HIND.

Pachaku; TEL.

This tall tree grows along the whole range of the W. Ghats, and in the hilly parts of Malabar and Konkan; also in Moulmein, Ataran, Chapedong, Penang, and Java. It is supposed to yield part of the cassia and cinnamon of commerce. Its leaves, on being bruised, have a strong spicy smell; the wood is fine, even-grained, and supposed very good, but the carpenters are not acquainted with it.—*Dr. Gibson; Wight, Ic.*

CINNAMOMUM LITSEÆFOLIUM. *Thw.*
Koodoo-Kurundu gass, SINGH. A tree of 50 or 60 feet, growing at Hapootelle, in the central province of Ceylon, at an elevation of 5000 feet. Its bark is quite inodorous.—*Thw.*

CINNAMOMUM NITIDUM. *Nees.*

<i>C. cassia, Nees, W. Ic.</i>	<i>Laurus nitida, Roxb.</i>
Kadigi-Hindi, . . . ARAB.	Putruj (bark), . . . HIND.
Tej-pat, . . . BENG.	Tamalpatra, . . . SANSK.
Sadrus, . . . HIND.	

Described as a tree in Sumatra, but as a small tree or shrub on the continent of India. Its flowers are small and of pale yellowish colour, and the bark is cinnamon-like in taste and odour. It is the plant which furnished the principal part of the Folia Malabathri of the old pharmacologists.—*Roxb. ii. p. 300; Eng. Cyc.; Voigt.*

CINNAMOMUM OBTUSIFOLIUM. *Nees.*

Laurus obtusifolia, Roxb. | L. Malabathrica, Roxb.

A tree of the mountainous countries immediately east of Bengal, with small greenish-yellow flowers. Its timber is very useful for various purposes. *C. obtusifolium, C. pauciflorum, and C. tamala* were found by Dr. Hooker up to 6000 feet in the Khasya mountains.—*Roxb.; Voigt.*

CINNAMOMUM ZEYLANICUM. *Nees.*

C. capparis-coronde, Blume, Nees.

Var. β. Multiflorum.

<i>C. multiflorum, W. Ic.</i>	<i>C. dubium, Nees.</i>
<i>C. perpetuiflorum, W. Ic.</i>	<i>C. villosum, W. Ic.</i>

Var. γ. Ovalifolium, Wight.

This exceedingly handsome variety of cinnamon is very abundant on the higher ranges of the Neilgherries, and in all sholas about Ootacamund, flowering in May. All the parts, when fresh, if crushed, have a powerful odour of cinnamon. The tree is very large, and has great girth. The timber is even-grained and good, but is not much in use. There are seven well-marked varieties of cinnamon found in the western (moist) forests of the Peninsula, growing up to the highest elevations. They differ much in size, and in the manner of growth of the tree itself, shape and size of the leaves, pubescence, etc.; but Colonel Beddome, after long observation, and with a very large collection of specimens, is inclined to look upon them all as varieties only of the *C. Zeylanicum*. They run almost imperceptibly into one another, and it is almost impossible to lay hold of any constant character worthy of a specific distinction; and many of the differences are, he believes, the effect of elevation and climate.—*Roxb.; Wight; Beddome.*

CINNAMON.

Darsini, ARAB.	Kaiamanis, . . . MALAY.
Theet-kya boh, . . . BURM.	Kulit manis, . . . "
Yuh or juh-kwei, . . . CHIN.	Katu karua, . . . MALLEAL.
Kanil, DUT.	Darasita, . . . SANSK.
Cannelle, FR.	Kakynnama, . . . SINGH.
Zimmet; Kanehl, . . . GER.	Kurundu, . . . "
Kinnamon, HEB.	Rassu kurunday, . . . "
Kinnamonon of HEROD.	Davoul kurundoo, . . . "
Tuj, Dalchini, . . . HIND.	Canela, SP.
Canella, It., LAT., PORT.	Karuwa; Lawunga, TAM.
Cinnamomum, . . . LAT.	Sanna lavanga patta, TEL.

The bark of *Cinnamomum Zeylanicum*, *Nees*, is the true cinnamon of the shops, and the true *Kinnemon* of Exodus xxx. 23. Two varieties of cinnamon are known in commerce, that of Ceylon and Cayenne, and the Chinese cinnamon, which is of far inferior quality. Cinnamon is exported from China, Siam, Cochinchina, and Java; but that which is of greatest value comes from Ceylon, which has been the chief place of production from the earliest period at which any record exists concerning the use of this spice, and which extends back to the days of the Roman republic. Up to the year 1760, during the latter portion of the Dutch rule in Ceylon, cinnamon grew in a wild state amongst the thick jungles of the low and hilly country, the best always having been cut upon the light soil of the maritime provinces. The tree is found only in the western, southern, and central provinces. The peelers recognise ten varieties of Kurundu or cinnamon, viz. Naga or snake, Kapuru or camphorated, Kabate or canalle or astringent, Savell or glutinous, Dawool or drum, Nika or wild, Mal or flowering, Toupat or trefoil, and We Kurundu or white ant cinnamon. The true cinnamon is often adulterated with the inferior barks of other species; and the volatile oil, on which its virtues depend, is sometimes fraudulently extracted. Besides the oil of cinnamon, a fatty substance called cinnamon butter and cinnamon suet is expressed from the ripe fruits.

CINNAMON BUTTER, or **Cinnamon Wax**, is obtained from *Cinnamomum Zeylanicum*. By strong decoction, the fruit yields a concrete oil, used for candles, and which exhales while burning a most delicious odour.

CINNAMON STONE, a precious stone found in Ceylon. It is a variety of lime-garnet of a clear cinnamon-brown tint, commonly occurring in masses, which are full of fissures. Translucent, seldom transparent.

CINNARA, in Hindu mythology, genii; and male dancers in Swarga, the heaven of Indra.

CIRCAETUS GALLICUS. *Gm.* Serpent eagle.

C. brachydactylus, Meyer.

Sap maril, BENG.	Pamula godda, . . . TEL.
Mal putar, CAN.	Rawul of, . . . WAGRI.
Samp mar, HIND.	Kondatelle of, . . . YERKALI.
Pambu prandui, . . . TAM.	

This is found in the south of Europe, North Africa; is common all over India and Asia; has been killed in Denmark, but never in the British Islands; prefers the open ground, queating like a harrier. It eats any creature, but snakes and lizards are its chief food. Hovering in the air, and pouncing down suddenly like a stone, it seizes the snake by the head with its talons, and the snake often twines its body around the bird, and so encumbers it that it is occasionally so caught.—*Jerdon.*

CIRCAR. In the Mahomedan land revenue system, a circar was a subdivision of a subah. The N.W. Provinces of India, excluding the Saugor and Nerbadda territories, comprised no complete subah, but only portions of the four subahs of Agra, Allahabad, Dehli, and Oudh. Each subah was divided into a certain number of circars, and each circar into parganas or mahala (which are used as equivalent expressions); and the parganas again were aggregated in dastooors or districts; and as the parganas of the same

dastoor are of course always contiguous, the dastoor statement in old registers, if copied with any regard to correctness, frequently forms a very important means of the verification of doubtful names. Subah is an Arabic word, signifying a head of money, or a granary. Circar (Sir-kar) is literally a chief, a supervisor. Dnastoor, besides signifying a rule, is also a minister, a moonshee. Pargana means taxpaying land, as well as a perfume composed of various ingredients. The title of subahdar, or lord of the subah, is long subsequent to Akbar's time. Siphazalar was the only designation of the emperor's viceroy in each subah.

Circars is a political appellation of a large tract of country between lat. $15^{\circ} 40'$ and $20^{\circ} 17'$ N., running from the Chilka lake to Motapilli, along 470 miles of sea-coast, with a breadth of from 70 to 100 miles of low country, an area of 17,000 geographical miles, watered by the Kistna, the Godavery, and Gondecama; and three or four British districts have been formed out of it, viz. part of Ganjam, Vizagapatam, Godavery, Kistna, and Guntur, and part of Nellore district, between the Eastern Ghats and the bay. From the 5th to the 11th centuries, the Kcari, or Lion kings of Orissa, held sway there, followed by the Gajapati dynasty in the north, and Narapati in the south, then by the Bahmani, the Kutub Shahi, and the Asaf Jahi. They were ceded to the French in 1753, and to the British E. I. Company in 1759, after Colonel Forde's successful attack on Masulipatam in April of that year. They contain the important towns of Ganjam, Chicacole, Vizianagram, Vizagapatam, Coringa, Yanoor, Masulipatam, Ellore, and Nizampatanam.—*Annals, Ind. Adm.* xi. p. 243; *Imp. Gaz.*

CIRCASSIA is the Cherkas of Asiatics. It is a mountainous country in the S.E. corner of Europe, on the northern face of the Caucasus, lying between lat. $41^{\circ} 50'$ and $45^{\circ} 20'$ N., and 37° and $47^{\circ} 20'$ E., about 550 miles long and 75 miles broad; area, 40,000 square miles. The highest summits for nine months are covered with snow.—*MacGregor*. In a small tract not less than seventy-two dialects are spoken. The Cherkess and the Che Cheu are the two great tribes. They take the common name of Adighe: but the Cherkess include amongst them the Khabard Abkhas, Ubiche, and other clans, and number from 400,000 to 500,000 souls. The Che Cheu number 150,000 souls. Their religion is a mixture of Christianity, Mahomedanism, and paganism. They reverence Merem, a benevolent deity, and Tschible, the spirit of thunder. There are three social classes, —Usdi or nobles, Tschfokot or freemen, and Pacht or slaves,—and these grades are hereditary, like the castes of India. When their forts or villages have been surrounded, they have destroyed their women and children, set fire to their dwellings, and perished in the flames, rather than surrender.

Their young women are famed for their beauty, and are sought for in the neighbouring kingdoms. They are brought up in simple and domestic habits by their mothers, are taught the use of the needle in decorative works, and to make their own clothes, and those of the men of their family, and are otherwise very carefully reared. They are sold to the bridegroom and to traders.

The Cherkess or Circassians were typical repre-

sentatives of the West Caucasian race. They were the most powerful and warlike of all the western nations. Since their final reduction, in 1864, by Russia, most of their lands on the left bank of the Kuban have been occupied by their conquerors, the great bulk of the Cherkess having withdrawn into Turkish territory, and dispersed over Armenia, Asia Minor, Syria, and the Balkan peninsula. Similarly, 20,000 Abkhasians migrated to Turkey at the close of the last Russian war, and both races have become predatory. Cherkess are to be found in Asia Minor, along with Lazi, where also are the Yuruk, a nomade Turk race occupying the uplands between Erzerum and the plains of North Syria. Kazzilbash also are there, and are scattered over Anatolia, Persia, and eastwards to Kabul. They call themselves Eski-Turk, or old Turks. The fertile plains of Raz Ova and Ard Ova, near Tokat, and the villages between Angora and Amasia, and between Karm Hissar and Tokat, are the Kazzilbash headquarters. They profess Islam, but avoid all inquiry into their doctrines. The Circassians and Abkhasians have never found a suitable home in Asia Minor, and are a serious disturbing element (Asia, p. 37), being indolent and predatory. The Cherkess and Abkhasians of West Caucasus are Sunni Mahomedans; the Kabard are Christians; and these three races number 138,000. In the time of Selim I., the Mameluks were all slaves of pure Circassian blood. More recently, only the Borgite Mameluks were of Circassian origin.—*Charles Tauschin, Circassians; Porter's Tr.* i. p. 141; *Lond. As. Trans.* i. p. 98; *MacGregor; A. H. Keane and Sir Richard Temple's Asia*.

CIRCASSIAN BEANS, seeds of the *Adenanthera pavonina*, used for ornamental purposes.

CIRCLE. Under the form of a winged circle, the Assyrians worshipped the supreme deity. The Buddhist wheel of the law, to be seen on the caves of Ellora and Ajunta, was probably borrowed from the Assyrians, as it reminds us of the wheel within wheel of Ezekiel. It is a symbol of the Hindu god Vishnu, under the Hindi term Chakram.—*Cal. Rev.* 1868. See Chakram.

CIRCUMAMBULATION.

Touaf, . . .	ARAB.	Parikarma, . . .	HIND.
Deisol, . . .	CELTIC.	Pradakshana, . . .	SANSK.

The circumambulation of sacred places has ever been part of the ritual of worship of Asiatic nations. The Mahomedan in circumambulation, Touaf, presents his left shoulder; the Hindu and Buddhist in Pradakshana walk round with the right side towards the fane or idol, and this would appear to be the original form of the rite. Its conjectural significance is an imitation of the procession of the heavenly bodies, the motion of the spheres, and the dances of the angels. These are also imitated in the circular whirlings of the Rafai darvesh. El Shahistani informs us that the Arab philosophers believed the sevenfold circumambulation to be symbolical of the motion of the planets round the sun. It was adopted by the Greeks and Romans, whose Ambarvalia and Amburbalia appear to be eastern superstitions, introduced by Numa, or the priestly line of princes, into their pantheism; and in Britain the processions round the parish preserve the form of the ancient rite. It is the processional of the Romish and other Christian churches, in which the clerical attendants perambulate the aisles, and is practised

in sanctifying a church or a churchyard. At the Holy Sepulchre, the Greek, Armenian, and other pilgrims circumambulate three times. In Ireland it is a very common practice to circumambulate the graveyard three times before proceeding with the corpse to the grave. See Parikarma. In Britain, at the time Christianity was established in Ireland by St. Patrick, and in the N. of Scotland by St. Columba, it was a practised rule. Hindus encircle with right hand to the shrine. The Buddhist Bhot, in passing the Mani, always leave it on the right.—*Northern Barrier; Burton's Mecca*, iii. 204.

CIRCUMCISION.

Khatna,	ARAB.	Soontan,	HIND.
Circumcision,	FR.	Circuncisione,	It.
Beschneidung,	GER.	Circuncision,	Sp.

The Phœnicians had this rite in common with the Egyptians and the Jews, who acknowledge having derived it from the former. According to Bunsen, however (iv. p. 273), it was not followed amongst the Phœnicians. It seems to have been a Semitic rite, which Abraham revived, for he was ninety-nine years old when he circumcised himself, Ishmael his son was thirteen, and Isaac was one year old. This rite now is practised amongst all the Jewish people and most Mahomedans. With the latter the usual time is in infancy, though the poverty of the parents and other circumstances sometimes retard its performance. It is performed with some ceremonial, and in presence of the friends of the family. It was prohibited by Akbar until the age of twelve, when the person to undergo it could judge of the propriety of the rite. It is not even mentioned in the Koran. It is considered as an act of imitative practice founded on the example of the disciples, but not on that of Mahomed himself. In Oman, on the shores of the Persian Gulf, among the Christians of Abyssinia, and in Egypt among the Arabs and Copts, the custom is prevalent. At Bosra and Baghdad, all the women of Arabian blood circumcise their daughters as well as their sons. At Cairo the women who perform this operation are as well known as midwives. They are openly called into houses of the people, without any secret being made of the intention with which they are invited. This is noticed by several Mahomedan writers, viz. in the *Dur-ul-Mukhtar*, the *Tahtavi*, and *Fattah-ul-Muain*, and, according to the last book, it is the inner labia that are removed. The Spaniards, at the time of the conquest of Central America, found circumcision practised, and it is still observed by the Tecuma and Manas tribes. Amongst the people in the Gulf of Carpentaria, all the males before the age of twelve or fourteen years undergo this rite. This custom is not derived from the Macassars, the latter affirming that it existed previous to the commencement of their intercourse with the coast. Flinders observed a case upon the Wellesley Islands, and the custom is also prevalent amongst the natives of certain parts of the south coast of Australia. Mr. Earl says a peculiar formation prevails among the aborigines of this part of Australia, and also of the adjacent coast of New Guinea, which renders the practice exceedingly conducive to comfort and health.—*Earl in Ethn. Lib. i.; Niebuhr, Travels*, ii. pp. 250, 251; *Malcolm's Hist. of Persia*, ii. p. 339; *Bunsen's Egypt*, iv. p. 273; *Herodotus*, ii. p. 36.

CIRCUS, a genus of birds of prey, known as the Harriers, found over all the world. They have a slender form, soft and downy plumage, and hence a noiseless flight. They are much on the wing, and hunt near the ground. They are of the sub-family Buteoninæ, family Falconidæ, and order Raptores.

True Harriers.

Circus cyaneus, Linn.

Falco albidus, Gmel.

| *F. pygargus*, Linn.

The hen-harrier of Europe in the winter visits the N.W. Himalaya, the Panjab, Bhutan, Nepal, and Kamaon.

Circus Swainsonii, A. Smith.

C. albescens, Less.

| *C. pallidus*, Sykes.

C. Dalmaticus, Rup.

| *Falco herbaola*, Tickell.

Pandouvi,

BENG.

| Pattai,

| Puna-prandu,

| Tella-chappa-gadda, TEL.

Dastmal,

| Pilli-gedda,

Girgut-mar,

| " " " " " "

The pale harrier is pretty generally distributed over Asia, Africa, and southern Europe, and is abundant in India during the cold weather. The male is pale grey above.

Circus cinereus, Montag.

C. Montagui, Vieill.

| *C. Nipalensis*, Hodgson.

This visits every part of India.

Circus melanoleucas, Gmel.

Pahatai,

| Ablaq pehata,

The pied harrier is common in Bengal and in the rice-growing districts.

Circus aeruginosus, Linn.

Falco rufus, Gm.

| *C. variegatus*, Sykes.

Mat-chil,

| Safed Sira,

Kutar, Kulesar,

| Tika, Dauri,

The marsh harrier frequents the banks of rivers, lakes, marshes, inundated fields, and wet meadow-land, carrying off frogs, fish, water insects, rats, shrews.—*Jerdon*.

CIRRHATÆ, or Cirrhadæ, or Cirrodæ, of classical history, are the ancient Kirata, the modern Kirauti of Nepal. Once a powerful dominant race, they have long since succumbed first to the Makwani, and then to the Ghorkali. In the Sanskrit tale of the Hero and the Nymph occurs the word Vedhaka. In some copies *Rechaka* is explained to be a Kirata, a forester, and the Kirata were known to the classical geography of ancient Europe as the Cirrhadæ or Cirrodæ. They were the occupants of Sogdiana, near the river Oxus. The term Kirata, however, seems to have been general, and applied to the savage mountain non-Aryan tribes, to whom the Aryan races were opposed. Some of them were in the south of the Peninsula, on the Coromandel coast.

CIRRHIPEDIA. The balanus or barnacle of this class of molluscs occurs in India.

CIRRHOPETALUM, a genus of plants of the order Orchidaceæ. In India are *C. albidum*, *caudatum*, *cæspitosum*, *cornutum*, *ambriatum*, *grandiflorum*, *Lindleyanum*, *Maccraei*? *macrophyllum*, *Neilgherrense*, *Roxburghii*, *Walkerianum*.

CIRSIUM ARGYRACANTHUM, *C. horridulum* and *C. lanceolatum*, flowering plants belonging to the order Matricariaceæ. The roots of *C. lanceolatum*, the Suh-twan or Ch'uen-twan of several parts of China, are used in diarrhoea and in urinary affections.—*Smith*.

CIS, a Latin word in use amongst geographers of Europe, to indicate a country on the hither side of rivers or mountains, as Cis-Himalaya, Cis-

Indus, Cis-Sutlej, etc. Trans, another Latin word, is used to indicate the further side, as Trans-Indus, Trans-Gangetic, etc.

CISSA, a genus of birds of the jay magpies, the sub-family Garruline, and order Insectores. *Cissa pyrrhocyanea* and *C. puella*, *Blyth*, occur in India.—*Tennent's Ceylon*.

CISSAMPELOS, a genus of plants of the natural order Menispermaceæ. *C. convolvulacea* occurs in Dindigul, Rajmahal, and Nepal; *C. obtecta*, of the Garhwal mountains, yields an ardent spirit in distillation.

CISSAMPELOS PAREIRA. *Linn. Pareira*.
Dukh-nirbisee, . . . HIND. | Pata, TEL.
Weni wala, . . . SINGH.

The extract of pareira is a valuable astringent diuretic, in doses of twenty grains dissolved in water thrice daily. The extract and infusion of nemooka, *C. hernandifolia*, afford good substitutes for this useful article.—*Beng. Phar.*

CISSIA, mentioned by Herodotus, is the Susiana of Strabo, and the modern Khuzistan.

CISSUS CARNOSA. *Lam.*

C. capreolata? | *Vitis carnosa*, *Wall.*
Drakri, Vallur, . . . BEAS. | Gidar dak, . . . RAVI.
Karik, Amal-bel, CHENAB.

A pretty climber, in the valleys of the N.W. Himalaya, from 2000 to 8000 feet. It is eaten by camels; and in Jummoo, the root, ground with black pepper, is applied to boils.—*Dr. J. L. Stew.*

CISSUS DISCOLOR, a vine of Java, with leaves coral-red beneath, and variegated with silvery patches above, owing to the presence of a film of air under the epidermis.

CISSUS QUADRANGULARIS. *Wall.*

Vitis quadrangularis, *Wall.*

Nullur, ka binj; paat, DUK. | Perrandei, coddì, . . . TAM.
Harjora, HIND. | Nulleru tige, . . . TEL.
Vajra valli, . . . SANSK.

Stems four-angled, winged, and jointed; it has all the properties of a parasite. The stems are succulent, and, beaten up into a paste, are given by the natives for asthma. The young, tender, and succulent stems are very generally eaten in India. When old this plant is deemed acrid, and a useful medicine; in Arabia it is used as an external application in rheumatic pains of the back and loins.—*Riddell*.

CIS-SUTLEJ, a political term applied in British India to the territory south of the Sutlej, occupied by Sikh chiefs during the last years of the Delhi empire, and now including the British districts of Ambala, Ludhiana, Ferozpur, and Hissar, with the native states of Patiala, Faridkot, Maler Kotla, Chitraul, Raikot, Buriya, Mandot, Jheend, and Nabha, which came under British protection in 1809. By the treaty with Ranjit Singh, of the 26th April 1809, he undertook not to make or allow any encroachment on the states on the left bank of the Sutlej. In 1849 the British abolished the sovereign powers of the various chieftains. Several states have lapsed to the British.

Patiala was formed by a Jat family of Sikh religionists, who emigrated from the Manjah about the early part of the 18th century. The area is 5412 sq. m., with a population of 1,586,000, and a revenue of Rs. 3,000,000.

Jheend has an area of 1236 sq. m., and a population of 311,000 souls, with a revenue of four lakhs of rupees. The maharaja is a Jat of the

Sikh faith. In 1857 its chief was the first person who marched against the mutineers at Delhi.

Nabha territory has an area of 863 sq. m., a population of 276,000 souls, and a revenue of four lakhs. The chief is of the same stock as the maharajas of Patiala and Jheend, but is the elder branch of the family. The family behaved ill in the Sikh war of 1845-46, but did well in the revolt of 1857, and were rewarded by a grant of land out of the Jhujjur territory.

Kalsia territory has an area of 155 sq. m., and a population of 62,000 souls, with a revenue of Rs. 130,000. The family came from the village of Kalsia in the Manjah.

Maler Kotla has 156 sq. m., with a population of 46,200 souls, and a revenue of one lakh. The family came originally from Kābul.

Faridkot consists of Faridkot proper and Kot-kupura; is S.W. of Ferozpur, borders to the S.E. on Patiala. It has an area of 643 sq. m., and a population of 51,000 souls, with a revenue of Rs. 75,000.

Mumdote is a Mahomedan chieftaincy, and was re-established in 1863.

The minor Cis-Sutlej chiefs were deprived of their sovereign powers, and the police management of their estates was assumed by the British Government; all customs duties were abolished, without compensation, except in the case of the nawab of Konjura and the mir of Kotahar, and the chiefs were reduced to the rank of ordinary jaghirdars. These were 80 in number, with revenues varying from Rs. 250 to 71,900.—*Imp. Gaz.*

CISTACEÆ, the rock-rose tribe of plants; one genus is the *Helianthemum*. *Cistus creticus*, of the Levant, one of the species which afforded Labdanum, collected formerly for medical use during the prevalence of the plague, by whipping the plants with leathern thongs, the resin adhering to the leathern straps. *C. Cyprinus*, *Lam.*, also yields this product.

CISTI TREES, the *Cytinus hypocistis*. See *Balanophorea*.

CISTUDO, a genus of reptiles of the family Chelonia. *C. Amboinensis* occurs in Amboyna, *C. dentata* in Java, and *C. trifasciata* in China.

CITHERN. ENG. A musical instrument. It obtained its name from the Sih-tara, the three-stringed lute of the East, supposed to be also the source of the word guitar.

CITRACEÆ, or Aurantiacæ, the Citron worts, or Orange tribe, are dicotyledonous polypetalous plants, and the orange, lemon, lime, shaddock, pomelmooze, forbidden fruit, and citron are the chief fruits of the order. The wampee, a fruit highly esteemed in China and the Indian Archipelago, is produced by *Cookia punctata*. The fruit of *Glycosmis citrifolia* is delicious, and that of *Triphasia* very agreeable. The *Egle marmelos* is used in medicine, and a perfume is made from its rind. The Indian genera are—*atalantia*, *triphasia*, *limonia*, *glycosmis*, *sclerostylis*, *bergera*, *Murraya*, *Cookia*, *clausena*, *micromelum*, *paramignya*, *suvunga*, *polycyema*, *feronia*, *segle*, *citrus*.

CITRIC ACID, lime-juice, *Acidum citricum*.
Jus de limon, FR. | Agro o sugo de limone, IT.
Zitronen saft, GER. | Jugo de limon, SR.

This occurs in commerce either in the form of the pure juice of lemons and limes, or crystallized by a chemical process.

CITRON, *Citrus medica*, Linn.

Beg poor, . . .	BENG.	Ethrog, . . .	HEB.
Sukkat, . . .	DAN.	Turanj, . . .	HIND.
Citronat verd, . . .	FR.	Cedro, . . .	IT.
Succade, . . .	GER.	Acitron verde, . . .	SP.

The citron is cultivated in many parts of India. It grows freely in Pegu and Tenasserim; and Dr. Mason met with citron trees in the jungles apparently indigenous. The fruit, however, is much inferior to the Bengal citron. The Jews at the feast of tabernacles carried the citron in their left hand as a sacrifice of a sweet smell.—*Smith*; *Von Mueller*; *Mason*.

CITRONELLA GRASS grows in the southern provinces of Ceylon and about Galle and several estates in the neighbourhood of that town are cultivated with it. The exports of its oil from Ceylon in the three years 1850 to 1852 were—

Year.	Ounces.	Value.	Year.	Ounces.	Value.
1850,	80,048	£3344	1852,	131,780	£2806
1851,	114,959	3742			

—*Simmonds' Products*, p. 513. See *Andropogon*.

CITRULLUS COLOCYNTHIS. *Schræd.*

Cucumis colocynthis, Linn.

Hanzal, . . .	ARAB.	Maqal, . . .	HIND.
Indrawan, Indrain, DUKH.		Hanzil, . . .	
Colocynth plant, . . .	ENG.	Peikumati, MALAK.	TAM.
Bitter apple, wild gourd, ,,		Kortumbah tummah, PAN.	
Kolukunthois, . . .	GREEK.	Patsa kaia, . . .	TEL.
Pakyoth, . . .	HEB.	Papara budama, . . .	

Grows in the Peninsula of India, Kamaon, near the Jumna, and in Japan. The rind is hard and yellow; the fruit is about the size of an orange; the pulp is light-yellow and spongy, containing the seeds.—*Roxb.*; *Powell*.

CITRULLUS CUCURBITA. *Schræd.*

Cucumis citrullus, *Serr.* | *Cucurbita citrullus*, Linn.

Belikh-zichi, . . .	ARAB.	Hinduaneh, . . .	PERS.
Tarmuj, Titoo laoo, BENG.		Tarbutaz, Turbutz, . . .	
Turbuz, . . .	HIND.	Chaya pula, . . .	SANSK.
Pha-rai, . . .	BURM.	Kuttoo wombi, . . .	
Water melon, . . .	ENG.	Hindano; Cauho, . . .	SIND.
Samoka, Jamauka, HIND.		Pitcha ghadi, . . .	SINCH.
Lamuja, . . .	LAMPUNG.	Komadu, . . .	
Mandeki, . . .	MALAY.	Pitchakai, . . .	TAM.
Pataka, Samangka, ,,		Darbuje, . . .	TEL.

The deeply-lobed and gashed leaves, and the round fruit, with a spotted rind and a cold watery pink or white flesh, in which lie a number of black seeds, sufficiently mark this species, which is most extensively cultivated all over the tropics of Asia, Africa, and America. In the Panjab plains it is apparently wild, and covers the ground for miles in sandy deserts near Sirsa, and in the Sind Sagur Doab, ripening in the cold weather.

The seed should always be preserved from the finest and richest-flavoured fruit, and is better for being three or four years old. The green melon is the finest flavoured, although many of the others are very good. Melons grow finer in the sandy beds of rivers, the temperature being more equal about the roots than it is in beds in the garden, especially during the night.

In India it is cultivated in river beds and in alluvial deposits of lakes, tanks, etc., where abundance of water can be had; it is used as a fruit. It is generally considered to be the melon of the Jews, mentioned in many parts of the Bible. The juice is very cooling, and is said to do well for a cooling drink in fever. The seeds are used as the source of a mild culinary oil in Western India. It is eaten in abundance during the season, which is from May to July. It is

gathered when ripe or almost decaying; the juice is expressed, and mixed with sugar and rose-water.—*Roxb.*; *Stewart*; *Riddell*; *Powell*; *Eng. Cyc.*; *Jaffrey*.

CITRULIUS FISTULOSUS. *Stocks.*

Tind, Albinda, . . . HIND. | Dilpasand, . . . HIND.

A small round gourd, commonly cultivated along the line of the Indus from Lahore to Sind; said to be merely a cultivated variety of *C. cucurbita*. It is cooked as a gourd, and has a pleasant flavour when young.—*Stewart*.

CITRUS, a genus of plants of the natural order Citraceæ. Several species grow wild or are cultivated in the south and east of Asia, and all of them furnish useful products. *C. aurantium*, *Risso*, yields its fruit, the orange; one essential oil from the rind; another from the flowers, the oil of neroli; and the wood is also of value in the arts. *C. decumana*, *Linnaeus*, furnishes the pumalo or shaddock fruit; and the cum-quat fruit of China is from *C. oliveformis*. The lime fruit of the *C. limetta*, *Risso*, is valuable for its juice, the lime-juice, which is used as a preservative from scurvy; and *C. limonum*, *Risso*, furnishes the useful lemon fruit, the rind of which yields an essential oil, or is used in cookery as lemon peel, while the juice of the fruit forms a source of the lime-juice. Independently of the historical fact that citrons and lemons at least were obtained from the Persians, it is certain, from the researches of Wallich and other Indian botanists, that it is among the lower ranges of the hills in Nepal, and extending most probably into China also, that the wild plants of the genus *Citrus* find a home.

CITRUS AURANTIUM. Linn. The orange.

C. nobilis, *Lour.*

Naranj, . . .	ARAB.	PERS.	Simao, Jeruk manis, . . .	MALAY.
Lieng mau, . . .	BURM.			
Sung zen, . . .	CHIN.		Madra; Nannanji, MALAK.	
Kan, Kiu, . . .	CHIN.		Swadu naringa, . . .	SANSK.
Orangen, . . .	DUT.		Nagrauga, Jambira, . . .	
Oranges, . . .	FR.		Narangas, . . .	SP.
Pomeranzen, . . .	GER.		Kitchili, Kolinji, . . .	TAM.
Narangi, . . .	HIND.		Kamala, Narija, . . .	TEL.
Konla, Kamla neeboo, . . .			Kichidi, Kittali, . . .	
Melaranee, . . .	IT.		Narangamu, . . .	

The orange is not mentioned by the ancient authors either of Europe or Arabia, and is supposed to have been introduced into Europe after the middle ages. Dr. Royle states that the orange and lemon are natives of India, the orange being found on the Neilgherries, on the borders of the sal forests of Sylhet, and perhaps also in China. Mr. (Sir) W. Elliot states that a very small variety of the orange (*Ida-chettu*, TEL.; *Chota kichili*, HIND.; *Kiri kittali*, CAN.; which is the *C. variato* of Heyne) grows both cultivated and wild in all the hilly country of the Circars, and he asks if it be the original of the cultivated *Citrus aurantium*. The orange tree is extensively cultivated. The finest sorts are the cintra, cowlah, and a small sweet orange which grows on a tree more like a creeper. The principal method of culture is by budding, the stocks generally being either seedlings or cuttings from the sweet lime. The best cintra, with a thin close rind, is produced upon the seedling stock; and it is said that the fruit grown upon the sweet lime stock is generally close and soft; this is very perceptible with some of the oranges. The best time for budding is in the cold season.

In Central India a variety is under cultivation

producing two crops a year. The blossoms of February and March yield their ripe fruit in November and December; and from the flowers of July mature fruits are obtained in March and April. To prevent exhaustion, only alternate fruiting is allowed. The leaves are rather bitter, and contain essential oil. A still more fragrant oil, called oil of neroli by the perfumers, is afforded by the flowers. The berries, while unripe, are gathered, dried, and turned in the lathe to the size of peas, and are used in issues on account of their fragrant odour. The rind or peel of the orange is bitter and aromatic, and affords a very useful stomachic tincture and syrup. The juice of the ripe fruit contains sugar, malic and citric acids, citrate of lime, mucilage, albumen, and gum. Like the lemon juice, it makes an excellent cooling drink, and is an invaluable specific in the treatment of scorbutic diseases. The seeds of the orange yield oil by expression, but not available in any quantity.

Citrus aurantium, var. Scabra, Hwa-kuih-hung of the Chinese, a variety of sweet orange largely cultivated in China.—*Smith; O'Sh.; Eng. Cyc.; Voigt; Elliot; Ainslie; Royle; Riddell.*

CITRUS BERGAMIA. *Ri. and P.* Acid lime.

<i>Citrus limetta, D.C.</i>	<i>Citrus acida, Roxb.</i>
Nibu, . . . BENG.	Eru mitchi nara-
Than-ba-ya, Shouk, BURM.	kam, . . . MALEAL.
Tan-pu-lo, . . . CHIN.	Nimbooka, . . . SANSK.
Chin-p'o-lo, . . . "	Dehi, . . . SINGH.
Limboo, . . . DUKH.	Elimitcham, . . . TAM.
Bergamotte lime, . . . ENG.	Gaja-nimma, . . . TEL.
Common sour lime, . . . "	Nimma-chettu, . . . "
Limu, Nimbu, . . . HIND.	Jambira-nimma, . . . "

This is grown in Peninsular India, Bengal, Assam, the Sunda and Molucca islands. There are many varieties,—round, small, spongy, smooth, thick-skinned, and yellow-juiced. The Arab variety from Muscat is large. Bergamotte oil is obtained from the fruit rind, and also oil from the flowers. The Mellarosa variety furnishes a superior oil and exquisite compilures. Large varieties of the acid lime are diffused all over the Tenasserim Provinces; and Europeans usually call them citrons. The varieties known in Hindustan are,—

- Pati neboo, common round lime.
- Gora neboo, thick-skinned, small, oval lime.
- Kaghazi neboo, long, small lime.
- Cheena-gora neboo, China lime, yellow-juiced lime.
- Kamurali neboo, large, oval, smooth-skinned lime.
- Rungpore neboo, round, smooth-skinned lime.
- Taba neboo, a large globose spongy-skinned lime.

—*Drs. Roxb., Mason, O'Sh.; Voigt; von Mueller.*

CITRUS BIGARADIA. *Duhamel.*

Mae fadyn, . . . ARAB.	Bitter Seville orange, ENG.
Kau-kiuh, . . . CHIN.	C. vulgaris.

The leaves differ from those of the sweet orange by the petiole only. The flowers are alike in both species. The rind of the fruit is bitter, acrid, and hot to the taste, the pulp acid and bitter, the seeds excessively bitter. The bark of the tree participates in these qualities. The rind of the fruit is used in making the celebrated Curaçoa liqueur. Its flowers yield the costly neroli oil. An acre will annually yield flowers to the value of £50. The rind is used for candied orange peel.—*O'Sh.; von Mueller.*

CITRUS DECUMANA. *Linn.* Pummalo.

Bator nibu, Batavi, BENG.	Maha-naram, . . . SINGH.
Shouk tung, . . . BURM.	Jamboola, . . . "
Hin, Yu, . . . CHIN.	Pumpalimas, . . . TAM.
Shaddock, Pummalo, ENG.	Bambalimas, . . . "
Chakotra, . . . HIND.	Bombalimas, . . . TEL.
Poomplemoos, . . . MALAY.	Pampara panasa, . . . "
Bambali-naringi, MALEAL.	Pulla pampara panasa
Paravata, . . . SANSK.	(acid var.), . . . "

The shaddock, the largest of the orange tribe, is cultivated in Southern Asia in gardens. The varieties are red and white, the former being preferred by some persons. The tree grows to a large size in a rich soil, and requires much pruning; the best time for doing this is when the crop of fruit is off. Fine fruit has been produced from the seed. The tree, when planted, should have a space of twelve feet all round it. The blossom is used for flavouring sweetmeats. It is a fine fruit, cooling and aperient, and in taste somewhat resembles a fine orange. It has been cultivated in China from the time of the great Yu, who mentioned it in his tribute roll. It flourishes near Amoy, and much pains are taken in grafting the tree upon other species of *Citrus*, so that the character of the fruit has been greatly improved. Its peel is very bitter, but aromatic.—*Ainslie; Riddell; Mason; Roxb.*

CITRUS DULCIS. *Volkamer.* The sweet orange. Of this are many varieties. One tree, in a sheltered place of the St. Michaels, in the Azores, has been known to bear 20,000 fruits in one year. Neroli oil is obtained from the flowers of this and other varieties. The oil of orange peel may be used for distilling with it costly odorous substances.—*von Mueller.*

CITRUS FUSCA. *Smith,* the Chih-koh or Chibshih of the Chinese, an orange tree of several parts of China.—*Smith.*

CITRUS JAPONICA. *Fortune.* Cum-quat.

C. olivæformis.

Kin-kiuh, . . . CHIN.	Golden orange, . . . ENG.
Lo-kiuh, . . . "	The fruit—Cum-quat, CH.

The Cum-quat is extensively grown by the Chinese in pots, and at one season of the year the plant is covered with its small, oval, orange-coloured fruit. This, as well as various other species of the orange, is mixed with the forced flowers, and together produce an excellent effect. It is grown in Chusan in groves on the sides of the lower hills. The plants are all arranged in rows about four feet apart, average three or four feet high, and do not exceed six feet. It is much more hardy than any other of its tribe. It produces its flowers and fruit in great abundance. In China, all the plants of the orange tribe which bear fruit in a small state are grafted.—*Fortune*, p. 122.

CITRUS LIMONUM. *R. and P.*

C. medica, <i>Roxb.</i>	Korina-neboo, . . . HIND.
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The true lemon. Fruit yields the lemon juice, peculiarly rich in citric acid. Its aromatic peel a volatile oil. A large variety is the Rosaline lemon.—*von Mueller.*

CITRUS LUMIA. *Risso.* The sweet lemon. It includes the pear lemon, with large pear-shaped fruit. Pulp not acid; rind thick, and peels.—*von Mueller.*

CITRUS MEDICA. *L.* Citron, common citron.

Beg-pura, . . . BENG.	Leemoo, . . . HIND.
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The citron was described by Theophrastus as occurring in Northern Persia (Media), and culti-

vated by the Jewish nation in Syria while under Roman dominion. Cultivated, and grows to a large size. The outer rind very rough, and covered with excrescences, and when ripe of a deep yellow colour and fragrant. Used to form a preserve, and the juice is made into lemonade. It is propagated by cuttings, layers, or seed. Essential oil and citric acid are obtained from the acid tubercular fruit. The candied thick rind of a variety is the Citronate or Succade. Cedra oil comes from a particular variety. The variety *C. digitata* is cultivated in China.—*Voigt; Rozb.; Riddell.*

CITRUS MICROCARPA is the Tsing-kiuh-pi or Tsing-pi of the Chinese.

CITRUS MONOPHYLLA grows wild along the Western Ghats of the Peninsula of India.—*Riddell.*

CITRUS PLANCHONI. *F. von Muel'ér.*

C. australis, Planchon.

A noble tree, 40 to 60 feet high, in the coast forests of E. Australia. Its globular fruits, the size of a walnut, are called native oranges. Its wood is beautiful, takes a high polish, and is used for furniture. Might be introduced into India.—*von Mueller.*

CITRUS TOROSA. *Mason.* Grows at Tavoy, with a leaf that looks like two leaves joined together, the wings on the petiole being as broad, or even broader, than the leaf itself. The fruit is small, and there are two varieties,—one with a smooth and another with a rough skin. Dr. Pickering met with a similar tree on the Samoan Islands, a member of the Philippine floras.—*Mason.*

CITRUS TRIFOLIA, a native of China; fruit about the size of a marble.

CITRUS WOOD of the Romans was extravagantly prized for tables, and is supposed to have been the *Callitris quadrivalvis*, *Vent.*, or jointed arbor-vitæ, the conifer which yields the gum sanderach. The wood was distinguished as striped 'tigrinæ,' spotted 'pantherinæ,' or speckled 'apiatæ.' Cicero gave £9000 for a citrus wood table.

CITTURA CYANOTUS is the forest kingfisher of Celebes. Along with it occur the Meropogon Forsteni; Carpophaga Forsteni, a fruit pigeon of North Celebes; Buceros cassidix, the great hornbill of Celebes; Trichoglossus ornatus, a beautiful brush-tongued parakeet; Corvus advena, a rare black and white crow.

CITY.

Pur, ur, basti, . . . HIND. | Buri, . . . SIAM.
Shahr, . . . PERS. | Ur, . . . TAM., TEL.

With all nations the eastern end of a house is the more honourable part; the west end, of a city. The towns of the south and east of Asia are small compared with those of Europe.

CITY of the Willows, name of a secret political society amongst the Chinese.

CIVET, Castoreum.

Zabad, ARAB.	Dedes, Jabat, . . . MALAY.
Ashbutchegan, "	Castoreo, PORT.
Javad, DUKH.	Babuwaja struga, RUSS.
Bivergeil, DUT.	Ghenda-malay-alu-
Civet, FR.	beeyum, SANSK.
Zibeth, Bibergeil, GER.	Algalia, SP.
Gond-badustar, HIND.	Kasturi, Munai, TAM.
Castora sibetto, IT.	Pullughoo-shuttum, "
Rase, Kusturi, MALAY.	

The civet perfumes of commerce are obtained

from two sources. One of the civets is a concrete substance obtained from two small bags in the preputial follicles of the beaver, *Castor fiber*, of both sexes. This is the commercial civet castor of N. America, and it is imported into India for medicinal purposes. The civet cats (*Viverra*), a genus of carnivorous animals, approach nearest in their form and habits to the fox and the cat. But the distinctive character of the civets consists in an opening near the tail, leading into a double cavity of considerable size, furnished with glands for the secretion of this odorous substance. When the secretion is in excess, the animal frees itself from it by a contractile movement, which causes the civet to ooze from the bag. This is carefully collected, and sold (not without adulteration with butter or oil to increase its weight) at a very high price. In Malay and Javanese this perfume is known by the names of rase and dedes, but the Sanskrit kasturi and the Arabic zabad, corrupted jabad, are also used as synonyms; and doubtless the Dakhani javad, Malay jabad, English civet, French civette, and German zibeth are all from the Arabic zabad. In the Eastern Archipelago, two species—*Viverra rasse* and *V. zibetha*—are kept in a half domesticated state for the purpose of yielding it. The first is a native of Java, and the last of the other large eastern islands, where the natives of rank are partial to the use of this perfume,—a not generally acceptable one to Europeans. A variety of this is an inferior sort of musk-bag procured from *V. zibetha*, found in many parts of Lower Hindustan, and called in Tamil Pullughoo poonay, and in Telugu Poonghoo pilli. The article is chiefly used by the people as a perfume, and in the preparation of certain liniments. These animals are carefully kept and tended in North Africa for the sake of the perfume. They are also common in South America and in the forests of Japan. Civet contains free ammonia, resin, fat, and extractiform matter, and a volatile oil, to which its odoriferous properties are due. It is imported into Britain from the Brazils and from Guinea. When genuine, it is worth from 30 to 40 shillings an ounce.—*Crawford, Dic. p. 100; Ains.; O'Sh.; Eng. Cyc. See Viverra.*

CIVIL SERVICE, the usual designation of the civil department of British India, including the members of it in the performance of political, magisterial, revenue, and judicial functions. There are two distinct branches, the higher being Covenanted officers, and almost all of this class are natives of Great Britain, and several of them, as Lord Clive, Warren Hastings, Sir George Barlow, Mountstuart Elphinstone, Sir Charles Metcalfe, have risen to be Governors-General of India, and Governors of Presidencies. The next grade are termed Uncovenanted, and comprise many Europeans, East Indians, and Natives, and, generally speaking, are in offices with lower powers than those of the Covenanted, as munisif, magistrate, tahsildar, mamalatdar, deputy collector, assistant commissioner, serishtadar. Many military officers have distinguished themselves as civil administrators.

CLADOBATES, found in the Malay countries, is an insectivorous genus of mammals. Several species very closely resemble squirrels.

CLADONIA RANGIFERINA. *Hoff.* Reindeer moss. See Lichen.

CLAM. ENG. A mollusc of the genus *Tridacna*, common in many parts of the world. There are six recent and one fossil species known, and the great clam shell of the Archipelago is used in Europe for church fountains.

CLANSHIP, somewhat resembling the form it assumed in Scotland, prevails amongst several of the Afghan and Baluch races, where the adjoining tribes have not as yet amalgamated into nationalities. Moral worth, national pride, love of country, and the better feelings of clan-ship, are the chief grounds upon which a great people can be raised. These feelings are closely allied to self-denial, or a willingness on the part of each man to give up much for the good of the whole. By this, chiefly, public monuments are built, and citizens stand by one another in battle; but all these are wanting from most of the races occupying British India at present. Many of the Rajput races are in clans, and Mahomedanism has given a bond, but even it is not strong; and China has three distinct races, the Chinese, the Manchu, and the Mongol, wholly separate in civilisation and in aspirations.—*Sharpe's Egypt*, i. p. 278.

CLARET, a term generally used to designate the red wines, the produce of the Bordelais. The most esteemed are Lafitte, Latour, Chateau-Margaux, and Haut-Brion. Claret is a general name for all rose-coloured wines, and in France what the English call claret is styled Bordeaux.

CLARIFIED BUTTER is the ghi of Hindustan and the yennai of the Tamil.

CLAUDIUS CÆSAR. The first authentic account of Ceylon, or Taprobane, extant, is given by Onesiculus, the Macedonian admiral, who lived B.C. 320 or 330. Diodorus Siculus, B.C. 44, gives an account of it. Strabo also mentions it; and Dionysius, who flourished A.D. 36, confirms former accounts, and alludes to its elephants. Sinbad also speaks of it in a volume, perhaps a compilation and in part a romance, as does Abdoor Razak. Ribiero also gives a notice of it. In the reign of Claudius Cæsar, a Roman publican, who farmed the custom duties of the Red Sea, was driven from Arabia by storms on to Ceylon, where he found a flourishing kingdom and an enlightened sovereign, whom he persuaded to send an embassy of four envoys to Rome, by way of the Red Sea, for the purpose of negotiating a commercial treaty.

CLAUDIUS PTOLEMY, author of the *Almagest*, lived A.D. 140–160.

CLAUSENA, a genus of shrubs or small trees belonging to the natural order Citraceæ. *C. heptaphylla* (Karan-phal, HIND.) grows in Bengal, has small flowers, greenish-yellow and anise-scented, and its bruised leaves have the fragrance of fresh anise seeds. *C. nana* grows in the Moluccas, *C. punctata* and *C. suffruticosa* grow in Chittagong; and the fresh leaves of *C. Sumatrana*, when bruised, have the fragrance of a lemon leaf. *C. Wildenowii*, *W. and A.*, grows near Chingleput, and *C. pubescens*, *W. and A.*, in the Peninsula.—*Roxb.*; *Voigt*.

CLAVIJO. Don Ruy Gonzales de Clavijo was appointed, A.D. 1403, by Henry III. of Castile on an embassy to Timur. He quitted Constantinople 14th November, and passed through Armenia, Azerbaijan, Teheran, Damghan in Khorasan, and reached Samarcand 8th September 1404; but Timur was too ill to receive them, and they

returned 21st November by Trebizond and Genoa (3d January 1406); Clavijo reached Seville in March.

CLAY, Fireclay.

Chomar, HEB. | Sangi-i-dalam, . . . HIND.
Gil; Chikni mitti, HIND. | Tannab, whiteclay, MALAY.

Clay is a compound, or perhaps only a mixture, of the two earths, alumina and silica, with water.

Pipe-clay, Nāmam, TAMIL, Kharra, DUKH., is of a greyish-white colour, with an earthy fracture, and a smooth, greasy feel; it adheres to the tongue, and is very plastic, tenacious, and infusible. When burnt, it is of a cream colour, and is used for tobacco-pipes and white pottery. This is found in abundance in several parts of India; and Hindus employ it for making the distinguishing marks on their foreheads, and (moistened with water) it is often applied round the eye in certain cases of ophthalmia, as well as to parts of the body that are bruised.

Potter's clay is of various colours, chiefly reddish or grey, and becomes red when heated. Mixed with sand, it is formed into bricks and tiles. It is abundant in many parts of South-Eastern Asia.

Stourbridge clay resembles potter's clay to a certain extent, but is far more refractory in the fire. It is of a dark colour, owing probably to the presence of carbonaceous matter. It is extensively used in making crucibles, glass pots, etc.

Brick-clay or *loam*, abundant in S.E. Asia, varies greatly in appearance, texture, and composition; its colour depending on the proportion of oxide of iron contained in it.

Porcelain clay, the kaolin of China, is very abundant in S.E. India, produced by the decomposition of felspar, and of binary granite.

Fireclays are procurable at Streepermattoor, Tripasoor, Chingleput, Metapollim, and Cuddapah; indeed, are very common in many parts of India, and bricks can be made that resist the action of great heat. A clay found at Beypore, 20 to 30 feet below the surface, is used for fire-bricks and for lining furnaces.

Unctuous clay is excavated from a pit near Kolat's in large quantities, and exported as an article of commerce, giving a royalty of Rs. 1500 yearly. It is used chiefly to free the skin and hair from impurities; and the Cutchi ladies are said to eat it to improve their complexions. The clay used for making pottery in Sind is obtained from situations washed over by the Indus river, 10 feet under ground. It is reduced to a fine powder, and soaked in water for 24 hours; after which it is kneaded with the hands and feet, and when it becomes dough-like, it is divided into lumps of the required shape.—*Tomlinson*; *Drs. Mason and Hunter*; *Tod's Rajasthan*, ii. p. 203.

CLEAN and **UNCLEAN**, terms often occurring in Scripture, as in Leviticus xi.–xv., have reference to unclean creatures, unclean persons, and personal and ceremonial uncleanness. As in Lev. xii. 2, after childbirth a Brahman mother is unclean for eleven days, a princess sixteen, merchant's wife seventy-one, and a Vellala Sudra thirty-one days. As with the Hebrew women, the Hindu mother in her days of uncleanness cannot touch any hallowed thing nor any domestic article. When the days of her purification are over, she takes or sends an offering to the temple. In the matter of clean and unclean things and persons, Mahomedans follow the Mosaic law.

CLEARING NUT. The ripe seeds of *Strychnos potatorum* are dried and sold in every market in India to clear muddy water. Natives of India never drink clear well water if they can get pond or river water, which is always more or less muddy. One of the seeds is rubbed very hard for a minute or two round the inside of the vessel containing the water, which is generally an unglazed earthen one, and the water left to settle; in a very short time the impurities fall to the bottom, leaving the water clear and perfectly wholesome.—*Roxburgh*.

CLEVELAND, AUGUSTUS, a Bengal civil servant, who in a brief space won over the wild races near Rajmahal. He died while still young; and the Government of India decreed a monument to his memory at Bhagulpur, with the following inscription:—To the memory of Augustus Cleveland, Esq., late collector of the districts of Bhagulpur and Rajmahal, who, without bloodshed or the terrors of authority, employing only the means of conciliation, confidence, and benevolence, attempted and accomplished the entire subjection of the lawless and savage inhabitants of the jungles of Rajmahal, who had long infested the neighbouring lands by their predatory incursions; inspired them with a taste for the arts of civilised life, and attached them to the British Government by a conquest over their minds, the most permanent, as the most rational mode of dominion; the Governor-General and Council of Bengal, in honour of his character and for example to others, have ordered this monument to be erected. He departed this life on the 13th day of January 1784, aged 29.—*Tr. of Hind.* i. p. 101.

CLEGHORN, HUGH, M.D., a medical officer of the Madras army; a learned botanist, contributor to scientific journals of articles on botanical subjects; Conservator of Forests at Madras and Northern India, founder of the Indian Forest Department. He wrote on the Hedge Plants of India, and the circumstances which adapt them for special purposes in particular localities, *Rep. Brit. Ass.* 1850; on the Grass Cloth of India, *ibid.* 112; on the Physical Effects of the Destruction of Tropical Forests, *ibid.* 1851, London Athenæum 1851, p. 781; also on the Forests and Gardens of Southern India; in 1864, upon the Forests of the Panjab and the Western Himalaya; and the article Forests in the *Encyclopædia Britannica*.

CLEIDION JAVANICUM. *Bl.*

Lasiostylis salicifolia, *Presl.* | *Rottlera urandra*, *Dalz.*

This middling-sized glabrous tree is common in the moist forests on the Anaimallays, elevation 2000 to 3000 feet, Travancore below Ghats, in the western forests of the Peninsula, Ceylon, Bengal, Burma, Java, etc.; timber hard, and good for building purposes.—*Beddome, Fl. Sylv.* p. 272.

CLEMATIDÆ. The name is derived from *Clema*, a vine branch, from the climbing properties of the family. The tribe is acrid and poisonous; the leaves and fresh stem, if bruised and applied to the skin, cause vesication. Griffith notices the virgin's bower in the Tenasserim Provinces, with simple fleshy leaves. *C. Gauriana* is abundant among the ruins of Gaur. It forms, with *Porana paniculata*, extensive lovely festoons. It is the *Moriel*, the Indian traveller's joy; is scandent and perennial. It grows all over India, from Dindigul and the Neilgherries up to Delhra Doon, along the foot of the Himalaya. Its flowers are white

at the close of the rains, and give out a very strong perfume. It is a hardy plant, and grows in any soil. *C. grata*, Biliiri, *HIND.*, is a plant of Kaghau and Nepal, and has small yellowish fragrant flowers; *C. florida* is of Japan. In France the *Clematis vitalba* is used by mendicants to cause artificial sores for the furtherance of their impostures. In Cochín-China, according to Loureiro, the *C. Sinensis* is used as a diuretic and diaphoretic. At the Mauritius, the *C. Mauritiana* is employed to blister the cheek for the relief of toothache. *C. Wightiana*, *W. and A.*, is scandent, perennial, with very soft villous leaves, coarsely serrated. It also is called *Moriel*, and grows common at Mahabaleshwar and the adjoining ghats, flowering after the rains. Wallich's *C. grata*, *Asiat. Pl.* t. 98, much resembles it, and is perhaps identical. Hedges and thickets where these plants grow have the appearance of being covered with hoar-frost, from the white feathery tails of the seeds. They are very ornamental, and worthy of a place in gardens for trellis work.—*Roxb.*; *Gr. Cat.*; *Riddell*; *Mason*, p. 671.

CLEMATIS VITALBA? *Smith*, the Tung-tsau or Muh-t'ung of the Chinese, is a climbing plant of Shan-si, Shen-si, China, has a yellow bitter wood, and vascular tissue arranged in plates passing from the centre to the circumference, and open enough to allow air to be blown through. The wood, root, and fruit are used medicinally.—*Smith*.

CLEODORA, a luminous mollusc, with a vitreous shell.

CLEOME, a genus of plants belonging to the Capparidaceæ or caper tribe. Species formerly placed under this genus have been transferred to the genera *Polanisia* and *Gynandropsis*. *C. monophylla*, *Linn.*, the *C. cordata*, *D. C.*, grows in Ceylon and the Peninsula, and has small, pale, rose-coloured flowers.—*Roxb.*; *Linn.*; *D. C.*

CLEOPATRA'S NEEDLE, a monolith, so called by the British; by the native ciceroni it was called Massallat-ul-Firaun, Pharaoh's packing needle. It was granted to the British nation, and in 1878 was brought to London, and erected on the left bank of the Thames.—*Burton's Mecca*.

CLEOPATRIS, an ancient town near the modern Suez.

CLEPSYDRA, the Ghatka-patra of the Maharatta race. A hollow vessel for measuring time. It has an aperture in it, and when placed in water the vessel gradually fills and sinks, and the final submergement indicates the measure of time.

CLERODENDRON, a genus of plants belonging to the Verbenaceæ. One species in the Terai forms a large shrub beneath every tree, generally intermixed with ferns, as polypodium, pteris, and goniopteris, and its sweet odour is borne far through the air. *Clerodendron* leaves, bruised, are used to kill vermin, fly-blows, etc., in cattle, and the twigs form toothpicks. Its flowers are presented to Siva (Mahadeo), milk, honey, flowers, fruit (ambrosia), etc. being offered to the pacific gods, as Vishnu, Krishna, etc.; while Mudar (*Calotropis acalepias*), Bhang, *Cannabis sativa*, *Datura*, flesh, blood, and spirituous liquids are offered to Siva, Durga, Kali, and other destroying deities. The Burmese cultivate a fragrant double *clerodendron*. One species, supposed by Dr. Stewart to be *C. infortunatum*, *L.*, called *Kali basuti* on the Beas, occurs in the Siwalik tract, and occasionally in the plains, and is probably the one

that Edgeworth mentions as being used in the Ambala tract to give fire by friction.—*Mason*; *Hooker, Him. Jour.* i. p. 387; *Dr. J. L. Stewart.*

CLERODENDRON INERME. *Gertn.*

Volkameria inermis, Linn.

Ban juen, . . .	BENG.	Nalla kupi, . . .	TEL.
Sang-kupi, . . .	DUKH.	Pisangi, Pisingha, . . .	"
Nir-notajil, . . .	MALEAL.	Eru-pichcha, . . .	"
Sangam kupi, . . .	TAM.		

A plant of India, China, the Moluccas, and N. Holland.

CLERODENDRON INFORTUNATUM. *Linn.*

Volkameria infortunata, R. | C. viscosum, Vent.

Bhant, . . .	BENG.	Barangi, . . .	PANJAB.
Peragoo, . . .	MALEAL.	Bokada, . . .	TEL.

A cheap and useful substitute for chiretta as a tonic and antiperiodic (?). The fresh juice of the leaves is given as an anthelmintic, also as a bitter tonic, in the malarious fevers of children of India. The bark is used by Indian and Arabian physicians.

—*Beng. Pharm.*; *Honigberger.*

CLERODENDRON NUTANS. *Wall.*

Gan-yan-pu-too, . . . BURM.

The Karen mountain glens of Tavoy and Mergui are embellished with the elegant flowering nodding clerodendron. The flowers are tinged with rose, but nearly white, growing in long panicles at the extremities of the branches, from which they make a graceful curve, and hang down perpendicularly from ten to fifteen inches, like an inverted cone, so that the soft green foliage seems canopied with rosy-white veils. It grows in Sylhet, blooms in the dry season, and rarely exceeds ten feet in height.—*Mason*; *Voigt.*

CLERODENDRON PHILOIDES. *Linn.*

Volkameria multiflora, Burm.

Taludala, . . .	TAM.	Tekkali, Tilaka, . . .	TEL.
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Grows in the Dekhan, Coromandel, Bengal, and Lower Kamaon.

CLERODENDRON SERRATUM. *Blume.*

C. macrophyllum, Sims. | Volkameria serrata, Linn.

Jaru teka, . . .	MALEAL.	Brahmari mari, . . .	TEL.
Chiru dekku, . . .	TAM.		

Grows in Salsette above the Bombay ghats, in Nepal, Morung mountains. The flowers and leaves are said to be eaten as greens; but in the northern Circars the root is known as Ganta-baringa, and is largely exported for medicinal purposes, being used for febrile and catarrhal affections. The leaves and seeds are also used medicinally.

CLERODENDRON SIPHONANTHUS. *Br.*

Siphonanthus Indica, Linn. | Arni, . . . HIND. of BEAS.

Arnah, . . . HIND. | Dawa-i-mubarak, . . . PERS.
Grows in both Peninsulas of India, in Bengal and Sylhet. Its root and leaves are officinal; the Persian name means the blessed medicine. It is slightly bitter and astringent; yields resin. Employed in syphilitic rheumatism.—*Stewart*; *Voigt.*

CLERODENDRON SQUMATUM.

Volkameria Kampferiana, Jacq.

Scarlet clerodendron. | Bu-gyee-nee, . . . BURM.

The Burmese gardens are ornamented with this species, which bears a large cone of superb scarlet flowers. Although said to be originally from China, it appears to be naturalized in Burma.—*Mason.*

CLERODENDRON VISCOSUM. *Vent.*

C. infortunatum, Linn. | Volkameria infortunata, Roxb.

Bhant, . . .	BENG.	Bokada, . . .	TEL.
Bu gyee-phyoo, . . .	BURM.	Gurrapu Gatto aku, . . .	"
Peragu, . . .	MALAK.	Manduka-bramhi, . . .	"
Saraswati aku, . . .	TEL.		

Grows in both the Indian Peninsulas, also in Bengal and Oudh.

CLEYERA GYMNANTHERA. *W. and R.* A large tree of the Neigherry hills, timber of a reddish colour, strong and durable.—*Drury.*

CLIMATE OF INDIA. The Hindu races familiar with the tropical countries in which they dwell, use 'water' as the term for describing the effects of a climate on health. In this sense it is the salubrity of a locality that is alluded to. Mahomedans of Asia treat of seven climates, the Haft aklim. This applies to the northern hemisphere, which they partition with zones of various breadth from east to west. When alluding to the salubrity of a locality, the Mahomedans of India and Persia use the words Ab-o-Howa, water and air. In Hindustan the people usually arrange the year into three periods, the Choumasa or Bark'ha, which is the rainy season, of four months' duration; after which is the Secala, or Jara, or Mohasa, the cold season; followed by the Dhoopkala or K'hursa, or hot season. This division indicates generally the course of the seasons in India, though in one locality the rains or the hot or cold seasons may be somewhat more prolonged. The primary divisions of continental India are four:—Hindustan, including in which term the whole Peninsula of India, and the Gangetic plain to the base of the Himalaya. 2. The Himalaya, a mountain chain which rises abruptly from the Gangetic plain, and is connected with a still loftier mountain mass (of Tibet) to the north, and beyond India. 3. Eastern India ultra Gangem, including native and British Burma and the Malay Peninsula. 4. Afghanistan. These divisions are marked out by great mountain barriers and by the ocean. The Himalaya mountains on the north are nowhere under 15,000 feet, usually exceed 17,000 and 18,000 feet, and rise in isolated peaks or groups of peaks to 21,000 and to 28,000 feet.

From the western extremity of the Himalaya, the Afghan mountains descend parallel with the Indus, with a gradually decreasing elevation from above 15,000 feet to the level of the ocean at the Arabian Sea. Throughout Afghanistan the climate is excessive. The cold of the winter is intense, the spring is damp and raw, and the summer, during which hot west winds prevail, is intensely hot at all elevations. The general aspect of the whole of Afghanistan is that of mountains with broad flat valleys. The crops are chiefly wheat and barley, even up to 10,000 feet elevation. Rice is cultivated in great quantity at Jalalabad 2000 feet, at Kabul 6400 feet, and to a considerable extent at Ghazni, 7730 feet. Poplars, willows, and date-palm trees are extensively planted, as well as mulberry, walnut, apricot, apple, pear, and peach trees, and also the *Elæagnus orientalis*, which bears an eatable fruit. The vine abounds as in all warm and dry temperate climates. The majority of the Afghan and Tibetan plants are also on the one hand natives respectively of the Caspian steppes and N. Persia, and of Siberia on the other.

The date is cultivated in Baluchistan up to 4500 feet; and a dwarf palm, *Chamerops Ritchieana* of Griffith, perhaps identical with the *Chamerops humilis* of Europe, occurs abundantly in many places, but with a somewhat local distribution.

The Burma and Malayan mountains, being given off from the snowclad mountains of East Tibet,

run to the south, and, though rapidly diminishing in elevation, are continued almost to the equator. The mean temperature of the Malay Peninsula is probably about 80° at the level of the sea, and in its general humidity it also approaches to uniformity; but dry and rainy weather are more distinctly separated in the northern countries than in the southern. The latter are not subject to the occasional violent rains and prolonged droughts which visit the former, and the former are not exposed to the frequent tracts of damp, foggy, rainy weather which are experienced in the latter. During the N.E. monsoon, which ordinarily blows from November to March, the weather is generally settled in the Straits of Malacca, and N. and N.E. winds prevail, particularly on the coast of the Peninsula, but are not of great strength save towards the northern end of the Straits. Breezes usually blow from the peninsular shore at night. The equable character of this season is attributable to the monsoon being broken by the mountains of the Peninsula, which stretch transversely to its direction.

The S.W. monsoon, which prevails from April to October, blows against the northern part of the west coast of both Peninsulas, and these consequently, in some measure, participate in the rainy climate which characterizes the eastern shore of the Bay of Bengal during this monsoon. Further south it is broken by the mountain belt of Sumatra, so that, in the Straits, land and sea breezes generally prevail in the vicinity of the coasts, and an equable climate is experienced. The Sumatra sides of the Straits, and the southern portion of the Peninsula, at night are exposed to occasional sudden squalls from the S.W., accompanied by lightning and heavy rains, called *Sumatrans*. North-westers are also experienced, but more rarely. They occur chiefly in the northern part of the Straits as far as the Arcoas, but sometimes blow right through them to the Carimons. During this monsoon the east coast of the Peninsula, having a leeward exposure, and being, for the greater part of its length, protected by the double wall of the Sumatran and Peninsular ranges, is perfectly sheltered, and dry weather prevails.

The Aravalli mountains extend from Hansi and Dehli to Gujerat. The Vindhya chain stretches across the centre of Hindustan, from the Gulf of Cambay to the Ganges, and is three to four thousand feet high.

A peninsular chain, called the Western Ghats, extends from Cape Comorin to the Tapti river, for upwards of 900 miles running parallel to the coast line, and perpendicular to the direction of the monsoons. This chain divides the Peninsula into two distinct climates, of a narrow western one in Malabar and the Konkan, and a broad eastern one, in which are the Karnatic, Mysore, and the Dekhan, traversed by all the peninsular rivers.

The Travancore mountains present a striking analogy to the island of Ceylon. They are loftiest at the extreme north of the district, where they stretch east and west for sixty or seventy miles, separating the districts of Dindigul and Madura. Notwithstanding the perennial humidity, the rainfall at Courtallum is only 40 inches; on the hills around, however, it is doubtless much greater. The Pulney or Palnai mountains west of Dindigul, the Annamalai south of Coimbatore, the Sheva-

gherry mountains south-west of Madura, and the ranges near Courtallum, are all well known. The remarkable palm, *Bentinckia*, so common on its mountains, is, however, not known in Ceylon. The other palms are *Caryota urens*, an *Areca*, *Phoenix farinifera*, and one or two species of *Calamus*.

To the north of Coimbatore the peninsular chain rises abruptly to 8000 feet, as the Neilgherry range, and continues northward as the mountains of Coorg. The rainfall, which is great on the western coast, is less on the Neilgherries, being 100 inches at Dodabetta, and 46 inches at Ootacamund. Further north, in the Nagar district of Mysore, there are many rounded or table-topped hills 4000 to 5000 feet high, often cultivated to that height, and rising in some places to upwards of 6000 feet. The climate of the western part is very humid, and particularly so at the town of Nagar or Bednore, 4000 feet high, on a spur of the western chain, where inclement rain is said to last for nine months.

The S.W. monsoon comes from the southern ocean, and is loaded with vapour. It strikes on the W. coast of India, passes over the plains of Bengal, and strikes on the Khassya mountains and the whole length of the Himalaya, discharging itself in heavy rains. From April till August it blows from the east of south, in August S.S.E., and in September more easterly, lowering the temperature of Bengal and of the northern plains, though the plains of the Panjab continue excessively heated.

From the vernal till the autumnal equinox, the heat of a great part of India continues great; but after the autumnal equinox the great mass of the Himalaya becomes intensely cold, and the plains of India generally become cool. Where the north-east monsoon prevails, it is everywhere a land wind, except on the east coast of the Karnatic and in the Malayan Peninsula. In Malaya it blows over a great extent of sea, and is therefore very rainy; but at the Karnatic the width of sea is not great, so that the rainfall, though well marked, is less, and terminates long before the end of the monsoon, probably from the wind acquiring a more directly southerly direction, after the sun has reached the southern tropic.

The rainfall varies prodigiously in different parts of India, from almost none to six hundred inches; but the quantity affords no direct criterion of the humidity of any climate, for the atmosphere may be saturated with moisture without any precipitation taking place. Thus, while in Sikkim 1° for 300 feet is the proportion for elevations below 7000 feet, on the Neilgherry Hills it is about 1° for 340 feet, in Khassya 1° for 380 feet; and the elevations of Nagpur and Ambala produce no perceptible diminution in their mean temperature, which is as great as that which would normally be assigned to them were they at the level of the sea.

At Mahabaleshwar it amounts to 248 inches annually. In the Southern Konkan, especially in the Sawantwari district, the rains are as heavy as in Canara. At Bombay the rains last from June till the end of September, and the fall is only eighty inches, which is considerably less than at any point further south on the coast. At Tannah, however, the average fall is more than 100 inches. In the Himalaya, the truly temperate vegetation supersedes the sub-tropical above 4000 to 6000

feet, and the elevation at which this change takes place corresponds roughly with that at which the winter is marked by an annual fall of snow. This phenomenon varies extremely with the latitude, humidity, and many local circumstances. In Ceylon and the Western Peninsula, whose mountains attain 9000 feet, and where considerable tracts are elevated above 6000 to 8000 feet, snow has never been known to fall. On the Khassya mountains, which attain 7000 feet, and where a great extent of surface is above 5000, snow seems to be unknown.

Sikkim occupies an intermediate position between Nepal and Bhutan, and unites the floras of Nepal, Bhutan, East Tibet, and the Khassya mountains, being hence, in a geographico-botanical point of view, one of the most important provinces in India, if not in all Asia. In Sikkim snow annually falls at about 6000 feet elevation, in Nepal at 5000 feet, in Kumaon and Garhwal at 4000, and in the extreme W. Himalaya, lower still.

East Tibet is an enormously elevated mountain mass, and many of the large rivers of Asia flow from it in several directions.

The Eastern Archipelago, from consisting of large islands separated by belts of sea, possesses a humid and equable climate; but the great continent of Australia, being a vast expanse of low land, becomes enormously heated when the sun is in the southern hemisphere, and presents extremes of climate. The common characters of Sind are great summer heat but little tempered by rain, great winter cold, a dry soil. Its flora resembles those of Egypt, Arabia, and the countries bordering on the Persian Gulf.—*Dr. Stocks; Journ. of the Ind. Archipelago*, ii., February 1848.

CLIMBING PLANTS are exceedingly numerous in the damp forests of India. At Tonglo, in Sikkim, at an elevation of several thousand feet, Dr. Hooker found great scandent trees twisting around the trunks of others, and strangling them; the latter gradually decay, leaving the sheath of climbers as one of the most remarkable vegetable phenomena of these mountains. These climbers belong to several orders, and may be roughly classified in two groups,—(1) Those whose stems merely twine, and by constricting certain parts of their support, induce death. (2) Those which form a network round the trunk by the coalescence of their lateral branches and aerial roots, etc.; these wholly envelope and often conceal the tree they enclose, whose branches appear rising far above those of its destroyer. To the first of these groups belong many natural orders, of which the most prominent are leguminosæ, ivies, hydrangea, vines, pothos, etc. The inosculating ones are almost all figs and Wightia; the latter is the most remarkable for its grasping roots.—*Hooker, Him. Journ.* i. p. 163.

CLISOBORA, now called also Muzanagar and Calisapura.

CLITORIA TERNATEA. Linn.

Nilaparajita, . . .	BENG.	Dhanattar, . . .	PUNHT.
Shwet Upurajita, . .		Nilaghiria; Khurne, SANSK.	
Oung-mai-phyoo, . .	BURM.	Aparajita; Asphota, ..	
Kali zar? . . .	DUKH.	Nilkata rodu, . . .	SINGH.
Khagin, Aparajita, .		Karka-kantun, . . .	TAM.
Kowatheti, . . .	HIND.	Kara-kartan, . . .	
Shlonga-kuspi, . . .	MAHR.	Tella dintena; Nalla	
Shunku puspa, . . .	MALEAL.	dintena, . . .	TEL.

The most common varieties of this cultivated flowering plant are the blue and white. They

blossom all the year round, and, being shrubby twining plants, are well suited for covering trellis work. They are of easy growth. Dr. O'Shaughnessy does not recommend its use in medicine. Its flower is sacred to Durga. A variety is *C. cæruleoflora*.—*Riddell; Hooker, Him. Journ.* ii. p. 291; *Mason; O'Sh.; Powell*.

CLIVE, ROBERT, LORD, a Madras civil servant, who became a great military commander, was Governor of Madras and of Bengal, and Commander-in-Chief of India. Amongst the many eminent men who have served and ruled in British India, he alone has been styled 'Great,' and whether his deeds as a military commander be considered, or his successes in the civil administration of India, posterity has conceded that title to him alone. He entered the service of the E. I. Co. in 1744 as a writer, but shortly afterwards obtained an ensign's commission. In September 1748 he distinguished himself as an ensign before Pondicherry, and again in August 1749 at Devicottah. In May 1751 he was present in the fight at Volcondah, and in July defeated the French at Condore. In 1751 he laid siege to Arcot, with only 120 Europeans and 200 natives; in August, took it. Arcot fort was invested by Chanda Sahib, with an army 4000 strong, but Clive withstood and repelled all assaults, and his opponents ultimately withdrew. This defence made a powerful impression on all the native races. In November he defeated Basin Rao at Arni; in December took the pagoda of Conjeveram; in 1752 he defeated the French and Chanda Sahib at Cauverypak; destroyed the town of Dupleix Fettehabad, defeated the French army, took Covelong, and commanded the land forces against Gheriah. In 1756, after the loss of Calcutta and the imprisonment by Suraj-ud-Dowla in the guard-room, since known as the Black Hole, he left Madras with 900 Europeans, recaptured Calcutta, and made peace. But war again broke out, and Clive with 3000 British and native soldiers defeated Suraj-ud-Dowla on the 23d June 1757 at Plassey, 40 miles south of Murshidabad. Mir Jafar was then declared subahdar of Bengal, Behar, and Orissa. Clive revisited Britain in 1760, with the rank of colonel. Mir Jafar was restored in 1763. Clive subsequently returned to India, corrected abuses in the government, obtained the dewani of Bengal, Behar, and Orissa, and assumed the civil and military government of the country, as Governor and Commander-in-Chief. His retrenchments caused a mutiny amongst the officers and men, which he quelled with severe measures. He returned to Britain in 1767, and at first was well received, but was subsequently impeached before Parliament, and only escaped trial by voluntary death in November 1774. In the ungrateful and final treatment by his country, his fate resembled those of La Bourdonnais, Dupleix, and Warren Hastings. Lord Clive was the territorial founder of British India. Warren Hastings re-organized every branch of the public service, created courts of justice, and reformed the revenue collections. Lord Clive's life has had several historians, amongst whom are Caraccioli and Malcolin.

Clive, Lord, Governor of Madras in 1801, was a relative. The descendant of Lord Clive's family is now styled Earl Powis in the peerage of Great Britain.—*Malletson; Orme*.

CLOAK. Many races in the south and east of Asia wear cloaks. That of Egypt is called burnoos. The cloaks of Afghanistan are the postin, postaki, postinchi, choga, and khosai; and the aba is worn in Arabia.

CLOCK.

Uuren; Uurwerken, DUT.	Orologgi; Oriuoli, . . . It.
Horologien; Horologes, FR.	Tschasii, Rus.
Uhren; Grosse-uhren, GER.	Relojes, Sp.

The clocks to be seen in the south and east of Asia are wholly of European manufacture. Prior to their introduction, the clepsydra or water-clock was in general use. These were of copper, with a small aperture at the bottom, through which, when placed in water, the clepsydra filled and sank, the sinking marking an hour. The water-clock of the Malay sailors is half of a cocoanut shell, with a small hole, through which, when placed in a bucket, it fills and sinks in an hour. Pendulum clocks were invented about A.D. 1260.

—*McCulloch.*

CLOTHING. The materials used for clothing, and the forms of dress of the peoples of the south and east of Asia, differ according to the climate, the pursuits, and the customs of the races. Through a thousand years, seemingly, the south-eastern races continue to wear clothing similar to what their forefathers put on; but Andamanese live wholly without apparel, and Chinese dress in a very elaborate manner. Hindu men and women, until the middle of the 19th century, wore only cloths without seams; and even yet their women's bodice (choli) and the men's jacket (angrika) alone are sewed, the lower garment of both sexes being cloths which are wrapped round the limbs, and often as neatly so as sewn trousers. In this form Hindu clothing is not called clothes, but cloths. Most Hindus wear trousers when on horseback; but the prevailing Hindu custom illustrates Mark x. 50, where mention is made of the blind man throwing off his upper garment, which was doubtless a piece of cloth. It is not considered at all indelicate among the Hindu people for a man to appear naked from the head to the waist, and servants thus attired serve at the tables of poor Europeans. In Arabia, a coarse cloak of camel or goat's hair is generally worn, often as the sole attire. It is called an aba, and its material is cameline. Amongst men of the very humblest classes of Southern India, at work, the simple loin-cloth is the sole body clothing; but almost all have a sheet, or a cumbli, or coarse blanket of wool or hair, as a covering for warmth. The Nair women move about with the body uncovered down to the waist, as an indication of the correctness of their conduct. The women of the Patuah or Juanga, in the Denkenal district of Orissa, also called Patra-Sauri or Leaf-Sauri, till 1871 wore a covering of a bunch of leaves, hanging from the waist, both in front and behind. Forest races in Travancore also wear leaves as covering. Hindu children, both boys and girls, up to three or four years of age, have no clothing; the Abor young women have a string of shell-shaped embossed bell-metal plates, and Miri women wear a small loin kilt made of cane. Throughout British India, however, almost every Hindu and Mahomedan woman, however humble in circumstances, is wholly covered, from the neck to the ankles, with choli and gown or trousers, or cloths of kinda. This seems to have been the practice from

remote antiquity. In Vedic times the women seem to have dressed much like the present Rajputni. They had a gogra or petticoat, a kanchali or corset, and a do-patta or scarf. In the Rig Veda there is an allusion to Indrani's head-dress as being of all forms, and several passages are indicative of considerable attention having been paid to personal decoration (Calcutta Review, No. 109, p. 30). Weaving is frequently alluded to in the Vedas. The Yajur Veda mentions gold cloth or brocade as in use for a counterpane. In the Ramayana are mentioned the wedding presents to Sita as consisting of woollen stuffs, fine silken vestments of different colours, princely ornaments, and sumptuous carriages. The Mahabharata mentions furs from the Hindu Kush, woollen shawls of the Abhira of Gujerat, cloths of the wool of sheep and goats, etc.; and weaving and dyeing are repeatedly mentioned in the Institutes of Menu.

The best representations of ancient costumes in India are the celebrated fresco paintings in the caves of Ajunta, some of which are still very perfect, and in the Buddhist caves of Ellora some paintings in a similar style had been executed. It is difficult to decide the date of these paintings, which represent scenes in Buddhist history; and the series may extend from the 1st or 2d century before Christ, to the 4th and 6th century of this era. In either case they are upwards of a thousand years old, and as such are of much interest.

One very large picture, covered with figures, represents the coronation of Sinhala, a Buddhist king. He is seated on a stool or chair, crowned with a tiara of the usual conventional form. Corn, as an emblem of plenty and fertility, is being poured over his shoulder by girls. He is naked from the throat to the waist. All the women are naked to the waist; some of them have the end of the cloth or sari thrown across the bosom, and passing over the left shoulder. Spear-men on foot and on horseback have short waist-cloths only.

In another large picture, full of figures, representing the introduction of Buddhism to Ceylon, and its establishment there, all the figures, male and female, are naked to the waist. Some have waist-cloths or kilts only, others have scarfs, or probably the ends of the dhoti, thrown over their shoulders. Female figures, in different attitudes around, are all naked, but have necklaces, ear-rings, and bracelets, and one a girdle of jewels round her loins.

Some writers have maintained that the ancient Hindus were ignorant of the art of preparing needle-made dresses. It has even been said that there is no word for tailor in the language of the Hindus; but there are two—one, *tunnavaya*, which applies to darning, and the *sauchika*, which applies to tailoring in general. The Rig Veda mentions needles and sewing, and the Ramayana and Mahabharata allude to dresses which could not have been made otherwise than with the aid of needles. In the ancient sculptures at Sanchi, Amraoti, and Orissa, several figures are dressed in tunics which required needles. Amongst these garments are discoverable what may be called the ancestors of the modern chapkan and jama. The dress differs so entirely from the chiton, the chlamys, the himation, and such other vestments as the soldiers of Alexander brought to India,

that they cannot be accepted as Indian modifications of the Grecian dress. In many ancient sculptures of Buddhist times, queens, princes, and ladies of the highest rank are represented without any garments; and it has been suggested that there prevailed either a conventional rule of art, such as has made the sculptors of Europe prefer the nude to the draped figure, or a prevailing desire to display the female contour in all its attractiveness, or the unskilfulness of early art, or the difficulty of chiselling drapery on such coarse materials as were ordinarily accessible in this country, or that a combination of some or all of those causes exercised a more potent influence on the action of the Indian artist than ethnic or social peculiarities in developing the human form in stone.

Allusion is made to 'saffron-tinted robes' and to 'red-dyed garments' in occasional passages of the early writings, but even these are comparatively rare as regards men, and there is little more in respect to women. In the drama of Vikram and Urvashi, written probably in the reign of Vikramaditya, B.C. 56, Puraravas, one of the characters, says of Urvashi, a nymph who has fainted,—

'Soft as the flower, the timid heart not soon
Foregoes its fears. The scarf that veils her bosom
Hides not its flutterings, and the panting breast
Seems as it felt the wreath of heavenly blossoms
Weigh too oppressively.'—Act i. Sc. 1.

Again,—

'In truth she pleases me : thus chastely robed
In modest white, her clustering tresses decked
With sacred flowers alone, her haughty mien
Exchanged for meek devotion. Thus arrayed,
She moves with heightened charms.'—Act iii. Sc. 2.

In the drama *Mrichchakatika*, attributed to king Sudraka of Ujjain, who reigned, according to the traditional chronology, in the first century before the Christian era, and is certainly not later than the 2d century after Christ, Act iv. Sc. 2 says,—

'*Maitreya*. Pray who is that gentleman, dressed in silk raiment, glittering with rich ornaments, and rolling about as if his limbs were out of joint?

'*Attendant*. That is my lady's brother.

'*Maitreya*. And pray who is that lady dressed in flowered muslin?—a goodly person, truly,' etc.

The following passage, taken from the *Uttara Rama Charitra*, by the same author, affords an idea of the costume of a warrior race. Janaka, the father of Sita, the heroine, in describing the hero Rama, says,—

'You have rightly judged
His birth; for see, on either shoulder hangs
The martial quiver, and the feathery shafts
Blend with his curling locks. Below his breast,
Slight tintured with the sacrificial ashes,
The deer-skin wraps his body, with the zone
Of Murva bound; the madder-tinted garb
Descending vests his limbs; the sacred rosary
Begirds his wrists; and in one hand he bears
The pipal staff, the other grasps the bow.
Arundati, whence comes he?'

The clothing of the Mahomedan races, who came from the north-west, has been of wool and of cotton, to suit the changing seasons, and the articles of dress were cut out and sewed in forms to fit the body. The Rajput and other martial races have always dressed similarly.

Most of the Hindu women of the present day appear in public, and at their numerous religious festivals opportunities for seeing their holiday

clothing are numerous. On such occasions the wealth of the mercantile classes admits of much display. In Bombay, a brilliant and picturesque array of women drifts along the streets and ways. The large and almost bovine Banyan and Bhattia women roll heavily along, each plump foot and ankle loaded with several pounds' weight of silver. The slender, gold-tinted Purbhu women, with their hair tightly twisted, and a coronal of mogra flowers, have a shrinking grace and delicacy that is very attractive; and, barring the red Kashmir chadar, their costume is precisely that in which an artist would dress Sakuntala and her play-fellows. The Marwari females, with skirts full of plaits, tinkling with hawk-bells, their eyes set in deep black paint, and the sari dragged over the brow so as to hang in front, are very curious figures, seldom pretty. Sūratī girls, with their drapery so tightly kilted as to show great sweeps of the round, brown limbs, smooth and shapely, that characterize those Venuses of the stable and kitchen, stride merrily along, frequently with a child on their rounded hips. There is a quaint expression of good-humour on their features, which have a comely ugliness unlike that of any other race. Then the trim little Malwen girls, who are already growing fairer and lighter in colour from their confinement in the cotton factories, sling quickly along with a saucy swing of their oscillant hips; and the longer-robed Ghāti, scarcely to be distinguished from women of the Marathi caste, go more demurely. The Brahman woman is best seen at Poona, Wye, and at Nasik. In Bombay she is scarcely distinguishable from Sonar, Sontar, and others. Those odd, gipsy-like wenches, the Wagri beggar women, each provided with a plump baby, carried in a tiny hammock slung on a stick, and handed to the spectator as if it were something to buy or to taste, are to be seen in numbers, sometimes twanging on a one-stringed sitar, but more often playing the tom-tom on their plump forms, with that frank simplicity of pantomime which is the supreme effort of Hindu eloquence, and the art of suiting the action to the word. Gosains, with their little stalls of shells, brass spoons, bells, and images. Everybody very happy, and all differently clad.

In the present day, before a Hindu puts on a new garment, he plucks a few threads out of it and offers them to different deities, and smears a corner with turmeric to avert the evil eye. The cloth of a married Hindu woman has always a border of blue or red, or other colour. The dress of a Hindu widow is white.

Arāb (men's) dress has remained almost the same during the lapse of centuries. Over the shirt, in winter or in cool weather, most persons wear a *sudeyri*, a short vest of cloth without sleeves; *kaftan* or *kuftan* of striped silk, of cotton or silk, descending to the ankles, with long sleeves extending a few inches beyond the finger-ends, but divided from a point a little above the wrist or about the middle of the forearm. The ordinary outer robe is a long cloth coat of any colour, called by the Egyptians *gibbeh*, but by the Turks *jubbeh*, the sleeves of which reach not quite to the wrist. Some persons also wear a *benesh* or *benish* robe of cloth, with long sleeves, like those of the *kuftan*, but more ample. It is properly a robe of ceremony, and should be worn over the other cloth coat, but many persons wear it instead of

the gibbeh. The Farageeyeh robe nearly resembles the beneesh; it has very long sleeves, but these are not slit, and it is chiefly worn by men of the learned professions. In cold weather, a kind of black woollen cloak, called *abayeh*, is commonly worn. Sometimes this is drawn over the head. The *abayeh* is often of the brown and white striped kind.

In British India the ordinary articles of clothing of Hindu and Mahomedan women comprise the *bulice*, called *choli*, *angia*, *kachuri*, *koortee*, and *kupissa*; the *petticoat*, called *lahunga*, *luhinga*, *ghagra*, and *peshgir*; and the *sari*, or wrapping loin-cloth.

Men's clothing consists of—

Loin-cloth, dhoti or loongi;

Trousers, called *pajama*, *izar*, *turwar*, *gurgi*, and *shalwar*;

Jacket, *coat*, and *vest*, called *anga*, *angarka*, *chapkan*, *dagla*, *jora*, *koorta*, *kuba*, *kufcha*, *mina*, *mirzai*, *jama*, *labada*;

Skull-cap, *topi*, *taj*;

Head-dress, *pagri*, *turban* (sir-band), *shumla* or *shawl turban*, *rumal* or *kerchief*, *dastar*;

Kamrband or *waist-belt*, *sash*.

The women of Burma wear a neat cloth bodice, and, as an under garment, a cloth wrapped tightly round from the waist downwards; but so narrow that it opens at every step, and all the inner left thigh is seen.

Fabrics used for the clothing of the masses of the people of India are plain and striped dooria, mulmul, aghabani, and other figured fabrics have established themselves; the finest qualities of muslins must necessarily be confined to very rich purchasers.

Long cloths or *panjams* of various qualities were formerly manufactured to a great extent in the Northern Circars, as well as in other parts; the great proportion consisted of 14 panjam or cloths containing fourteen times 12 threads in the breadth, which varied according to local custom from 38 to 44 inches. 14 lbs. was considered the proper weight of such cloths, the length 36 cubits, half-lengths being exported under the denomination of *salampores*. The manufacture of the finer cloths, which went up to and even exceeded 50 panjam, has long been discontinued.

Other articles of dress of *women of Bombay* are the *bungur*-*kuddee*, *chikhee*, *choli* or *khun*, *choonee* or *head-cloth*, *doorungu*-*pytancee*, *guj* (covering for breast), *guzzee* or *long robe*, *izarband*, *kempchunder* (widows), *kurch*-*chunderkulee*, *peshgir*, *pajama*, *saris* of kinds, *silaree*.

In *Cutch*, the *khombee*, *sadlo*, for women; for men, *pairahan*, *pajama*, *izarband*.

Other articles of dress of the *men of Bombay*,—*angarka*, *chaga*, *dhoti*, *izarband*, *koortah*, *labada* (in Baluchistan), *pairahan*, *pajama*, *turban*, *ujruk* or coloured sheet (in Sind).

Men's Cloths are manufactured all over British India, and those of the Madura district have lace borders; they are sold as high as 70 rupees for a suit of two pieces. Conjeeveram is noted for its silk-bordered cloths, which are sold for not more than 15 rupees a pair.

Women's Cloths of cotton form an article of manufacture in every district. Madras manufactures a nicely coloured women's cloth called *oolloor sailay*, sold for 7 rupees and upwards. Arnee is noted for its manufacture of a superior

quality of white cotton cloths of various patterns. Those of Sydapet, in the outskirts of Madras, are of ordinary quality, and of different colours. Ganjam also fabricates a common sort, with a few of more value worked with lace borders, but not sold for more than 50 rupees.

Women's Silk Cloths.—The principal places for the manufacture of native female silk cloths are the towns of Benares, Berhampore, and Tanjore. Those of Benares are generally of superior quality, with rich lace borders, and they are sold at from 50 to 350 rupees or upwards. Berhampore cloths are wholly silk, but nicely finished. Tanjore cloths are also neatly finished, with nicely-worked borders, both of lace and silk, of various colours; they are sold at from 15 to 150 rupees.

Silk Cloths, called *pethambaram*, are chiefly brought from Benares and Nagpur; they are also made at the town of Combaconum. The Benares cloths are highly prized for their superior quality; they measure 12 by 2½ cubits a-piece; two pieces make one suit of an upper and under garment. Hindus wear these cloths during their devotions and holiday time. They are sold from 50 to 350 rupees, or even more. The silk fabrics of Combaconum are good, although not equal to those of Benares.

White Cloths were manufactured all over Southern India, but those of Manamaduru, in the district of Trichinopoly, were very superior in quality, and used by the more respectable of the inhabitants as clothing, under the name of Manamaduru sullah. That at Arnee, in the district of Chingleput, known as Arnee sullah, is of different quality.

Women's coloured cotton Cloths.—These coloured cotton cloths are largely made in the Madura district. They are of various sizes, with or without lace-worked borders. Those with lace vary in price from 15 to 200 rupees each; they are generally purchased by the wealthier natives, by whom they are highly prized. These fabrics are known in the market as *vankey*, *thomboo*, *joonady*, and *ambooresa*, all of them lace-bordered.

Women's silk Cloths are made chiefly in Benares and Nagpur; but they are fabricated also at Berhampore, Tanjore, Combaconum, and Conjeeveram, in the Madras Presidency. Those of Benares and of the Mahratta countries are celebrated for their superiority, and are highly prized for their lace borders; their size is 16 by 2½ cubits, and they are sold at 50 to 300 rupees and upwards; those made at Berhampore, Tanjore, and Combaconum are not equal to the Benares cloths, but are well made, and sold at from 15 to 70 rupees each. The women's cloths of Tanjore and Madura manufacture, and men's head-cloths, also from Madura, will compete with the production of any other loom in the world.

Printed Cloths are worn occasionally, as in Berar and Bundelkhand, for sarees; and the ends and borders have peculiar local patterns. There is also a class of prints on coarse cloth, used for the skirts or petticoats of women of some of the humbler classes in Upper India; but the greatest demand for printed cloths is for palempores, or single quilts.

In the costlier Garment Cloths woven in India, the borders and ends are entirely of gold thread and silk, the former predominating. Many of the

saree or women's cloths, those made at Benares, Pytun, and Burhanpur, in Gujerat, at Narrainpet, and Dhanwarum, in the territory of His Highness the Nizam, at Yeokla in Kandesh, and in other localities, have gold thread in broad and narrow stripes alternating with silk or muslin. Gold flowers, checks, or zigzag patterns are used, the colours of the grounds being green, black, violet, crimson, purple, and grey; and in silk, black shot with crimson or yellow, crimson with green, blue, or white, yellow with deep crimson and blue, all producing rich, harmonious, and even gorgeous effects, but without the least appearance of, or approach to, glaring colour, or offence to the most critical taste. They are colours and effects which suit the dark or fair complexions of the people of the country; for an Indian lady who can afford to be choice in the selection of her wardrobe, is as particular as to what will suit her especial colour—dark or comparatively fair—as any lady of Britain or France. Another exquisitely beautiful article of Indian costume for men and women, is the *do-patta* scarf, worn more frequently by Mahomedan women than Hindu, and by the latter only when they have adopted the Mahomedan *lunga* or petticoat; but invariably by men in dress costume. By women this is generally passed once round the waist over the petticoat or trousers, thence across the bosom and over the left shoulder and head; by men, across the chest only.

Do-pattas, especially those of Benares, are perhaps the most exquisitely beautiful and prized of all the ornamental fabrics of India; and it is quite impossible to describe the effects of gold and silver thread, of the most delicate and ductile description imaginable, woven in broad, rich borders, and profusion of gold and silver flowers, or the elegance and intricacy of most of the arabesque patterns, of the ribbon borders, or broad stripes. How such articles are woven with their exquisite finish and strength, fine as their quality is, in the rude handlooms of the country, it is hard to understand. All these fabrics are of the most delicate and delightful colours,—the creamy white, and shades of pink, yellow, green, mauve, violet, and blue, are clear yet subdued, and always accord with the thread used, and the style of ornamentation, whether in gold or silver, or both combined. Many are of more decided colours,—black, scarlet, and crimson, chocolate, dark green, and madder; but whatever the colour may be, the ornamentation is chaste and suitable. For the most part, the fabrics of Benares are not intended for ordinary washing; but the dyers and scourers of India have a process by which the former colour can be discharged from the fabric, and it can then be re-dyed. The gold or silver work is also carefully pressed and ironed, and the piece is restored, if not to its original beauty, at least to a very wearable condition. The *do-pattas* of Pytun, and indeed most others except Benares, are of a stronger fabric. Many of them are woven in fast colours, and the gold thread—silver is rarely used in them—is more substantial than that of Benares. On this account they are preferred in Central India and the Dekhan,—not only because they are ordinarily more durable, but because they bear washing or cleaning better. In point of delicate beauty, however, if not of richness, they are not comparable with the fabrics of Benares.

Scarfs are in use by every one,—plain muslins, or muslins with figured fields and borders without colour, plain fields of muslin with narrow edging of coloured silk or cotton (avoiding gold thread), and narrow ends. Such articles, called *sehla* in India, are in everyday use among millions of Hindus and Mahomedans, men and women. They are always open-textured muslins, and the quality ranges from very ordinary yarn to that of the finest Dacca fibres. The texture of the *dhotees*, *sarees*, and *loongees* manufactured in Britain and sent to India, is not that required by the people, nor what they are accustomed to. It is in general too close,—too much like calico, in fact,—which of course makes the garment hot, heavy in wear, and difficult to wash. Again, the surface becomes rough, and, as it is generally called, fuzzy in use, while the native fabric remains free.

Few native women of any class or degree wear white; if they do wear it, the dress has broad borders and ends. But all classes wear coloured cloths,—black, red, blue, occasionally orange and green, violet and grey. All through Western, Central, and Southern India, *sarees* are striped and checked in an infinite variety of patterns. Narrainpet, Dhanwar, and Muktul, in the Nizam's territories; Gudduk and Bettigerry in Dharwar; Kolhapur, Nasik, Yeokla, and many other manufacturing towns in the Dekhan; Aruce in the south, and elsewhere, send out articles of excellent texture, with beautifully-arranged colours and patterns, both in stripes and checks. For the costly and superb fabrics of cloths of gold and silver (*kimkhab*), and the classes of washing satins (*mushroo* and *hemroo*), even if European skill could imitate them by the handloom, it would be impossible to obtain the gold and silver thread unless it were imported from India. The native mode of making this thread is known, but the result achieved by the Indian workman is simply the effect of skilful delicate manipulation. The gold and silver cloths (*kimkhab*) are used for state dresses and trousers, the latter by men and women; and ladies of rank usually possess petticoats or skirts of these gorgeous fabrics. *Mushroo* and *hemroo* are not used for tunics, but for men's and women's trousers, and women's skirts; as also for covering bedding and pillows. They are very strong and durable fabrics, wash well, and preserve their colour, however long worn or roughly used; but they can hardly be compared with English satins, which, however, if more delicate in colour and texture, are unfitted for the purposes to which the Indian fabrics are applied. For example, a *labada* or dressing gown made of scarlet *mushroo* in 1842, had been washed over and over again, and subjected to all kinds of rough usage, yet the satin remained still unfrayed, and the colour and gloss as bright as ever. Many of the borders of *loongees*, *dhotees*, and *sarees* are like plain silk ribbons, in some instances corded or ribbed, in others flat. The *saree*, *boonee*, *bafta*, *jore*, *ekpatta*, *gomcha*, etc. of Dacca, have latterly been made of imported British yarn. Fabrics of a mixed texture of cotton and silk, are in Dacca designated by various names, as *nawbutter*, *kutan*, *roomee*, *apjoola*, and *lucka*; and when embroidered with the needle, as many of them frequently are, they are called *kusheeda*. The silk used in their manufacture is the indigenous *muga* silk of Assam and Sylhet, but the

cotton thread employed was lately almost entirely British yarn, of qualities varying from Nos. 30 to 80. These cloths are made exclusively for the Jedda and Bussora markets, and a considerable stock is yearly imported in the Arab vessels that trade between Calcutta and these ports. Pilgrims, too, from the vicinity of Dacca, not unfrequently take an investment of them, which they dispose of at the great annual fair held at Meena, near Mecca. They are used by the Arabs chiefly for turbans and gowns. The golden colour of the muga silk gives to some of these cloths a rich lustrous appearance; pieces made of native-spun cotton threads and of the best kind of muga silk, are admired.

The export trade of the Madras Presidency in madapollams and long cloths has been annihilated by the goods laid down by the British manufacturer in all the bazars of India.

The dress of Hindu men is of white muslin or cotton cloth, and their upper coat is now generally sewed. The under garment for the lower part of the body, the *do-wati* or *dhoti*, is a loose unsewed wrapper or Cloth. Hindu women of all classes mostly wear unsewed Cloths of green, red, or yellow-coloured cotton, edged with silk or gold embroidery, and a bodice of cotton or silk.

The dress of the *Bhattia* men consists of a jama or tunic of white cloth or chintz, reaching to the knee; the *kamrband* or cincture, tied so high as to present no appearance of waist; trousers very loose, and in many folds, drawn tight at the ankle; and a turban, generally of a scarlet colour, rising conically full a foot from the head. A dagger, shield, and sword complete the dress. The *Bhattiani* wears a fine woollen brilliant red *gagra* or petticoat, and scarf thirty feet in width. They also wear the *chaori*, or rings of ivory or deer-horn, which cover their arms from the shoulder to the wrist, of value from sixteen to thirty-five rupees a set; and silver *kurri* (massive rings or anklets) are worn by all classes, who deny themselves the necessities of life until they attain this ornament.

John xix. 23 says, 'Without seam, woven from the top throughout;' and the clothes of a Hindu, who is not employed in the service of Europeans or Muhamnadaus, are always without a seam; have neither buttons nor strings, being merely cloths wrapped round the upper and lower parts of the body. A Brahman, strict in his religious observances, would not on any account put on clothes which had been in the hands of a Muhammadan tailor.

The *angarkha* or undress coat, and the *jama* or dress cloth, are worn only by men.

The *anga* is a sleeveless vest.

Buchhane, in Dharwar, is commonly worn as a waist-cloth by children of respectable people; also worn by adults of the same class while sleeping. Price one rupee two annas.

Chādar is a sheet. A chadar made to the order of Kunde Rao, the Gackwar of Baroda, for a covering of the tomb of Mahomed at Medina, cost a krór of rupees. It was composed entirely of inwrought pearls and precious stones, disposed in an arabesque pattern. The effect was highly harmonious.

Chanduse, a cotton scarf, coloured border and ends, used in Khyrpur.

The *Choli* or bodice of women is of silk or cotton,

and is usually fastened in front. Many women of Gujerat also wear a gown. The *choli* is an under-jacket worn by women. The *thans* or *choli* pieces of Dharwar, of a description used by women working in the fields, cost three annas for each *choli*, or twelve annas the piece.

Cumbli are blankets of goats' hair or wool. Every labouring family in the Peninsula has them. They cost from one to three rupees.

Kamrbands are sashes worn by men. They are of cotton and of silk.

The *Dhotee*, a flowing cloth for the body, from the waist to the feet, is worn by men, and is generally bordered with red, blue, or green, like the *toga prætexta* (linibo purpureo circumdata). *Dhotees* are usually worn so as to fall over and cover the greater portion of the lower limbs. One of a coarse cotton, commonly worn by cultivators and labourers in the field, may cost about two rupees.

Izarband is of silk or cotton, and is a tie for trousers.

Khess, a chintz scarf in use in Hyderabad (Sind).

Labada, a dressing-gown.

Loongee, or scarf of cotton, of silk, and of silk and cotton, is worn by men. Where of silk, it is usually enriched with a border of gold and silver.

Mundasa, a cloth worn by the poorer classes in Dharwar; costs 1½ rupees.

The *Pajama*, or trousers, is worn both by men and women.

Panchrangi of Dharwar has a warp of silk and weft of cotton, worn ordinarily by dancing women, not considered proper for respectable women; 1 than, 1 rupee 12 annas.

Panjee of Dharwar is a cloth used by well-to-do people to dry themselves after bathing, but also worn as a waist-cloth by poor people.

Patso of Burma is a cloth worn by men of all classes. In Akyab it is worn by the Mug race.

Pitambara means clothed in yellow garments. Hindu hermits, and many of the Hindu and Buddhist ascetics, are required to wear clothes dyed of an ochrey yellow.

The *Rumal* or kerchief, the *kamrband* or waist-belt, and the *do-patta* or sash, are men's garments.

Salendong, a silk scarf of Singapore.

Salimote, a silk scarf of Singapore.

Saree, the Hindu woman's lower cloth, costs from two rupees and upwards. Each woman generally has a new one once a year. It is often used also as an upper garment, in the form of a scarf for enveloping the person, one end being usually brought over the head as a covering. The *saree*, as used by women to cover the whole body, is the *kalunma* of Homer.

Selya, in the south of India, is a sheet or body covering in use amongst the poorer classes, cultivators, and labourers, wrapped round their shoulders and body when employed in the fields. Their usual cost is about 1½ to 1¾ rupees. In Dharwar one is always presented to the bridegroom by the relations of the bride, together with a turban.

Turbans of all kinds are worn by Hindus and Mahomedans, and known as *dastar*, *pagri*,—turban being from the Persian words, *Sir-band*, head-binder. The Arabs and Turks call it *Imamah*. The other head-dresses are the *rumal*, the *taj*, and the *topi*.—*Ward, Hindus*, iii. 186; *Drs. Taylor and Watson, Ex. of 1862; Calcutta Review; Pioneer Newspaper*.

CLOTHS manufactured in India:—

Cotton fabrics of Bombay comprise the bafta, bochuu, carpet, chadar, chael, chandni, choli, do-patta, dhota, dhoti, dungaree, dustoorkhana, horni, khes, khoji, khurwa a coarse red cloth, kurchar, loongee, mussoti, pagga, peshgir, phatka, pichoree, quilt or razai, ruual, saree, soussee, soot, soojunee, tablecloths, table napkins, towels, turbans.

Silk fabrics of Bombay are,—bochun, bulbuls, cholepun, doorungee—pytancee, gul-badan, gown pieces, hemroo, karrah, katchia, khun, khudruf, kootnee, kud, kunawaz, meenia-sari, mukhmul, petambar-zanani, petambar-mardana, pajjama, rowa, rumal, senna, shalwar, tasta, uddrussa, yeolah.

Silk and cotton made fabrics of Bombay are the dariyai - sari, ghaut, khunjree, lake, lake-meenia, loongi, luppa, with silk and gold and silver embroidery, mukhtiar-khunee, meenia-ghaut, mushroo.

Bhangarah, a very coarse and strong sackcloth, made from the inner bark of trees, and much used in Nepal as grain sacks.

Bhim Poga of Nepal, a fabric, half woollen, half cotton.

Changa, a coarse cotton cloth manufactured by the natives of Newar.

Chintz (Chinti, HIND., a drop) or pintado, printed calicoes.

Dalmiyan, or net.

Dariyai, plain silk.

Deogun, a coarse cloth of silk, with gilt tissue.

Elaicha, a fabric of mixed cotton and silk.

Susi and *Khesi*, striped calico, woven with coloured thread. The silken *khesi* is also edged with gold or silver.

Kashidas-tussur, embroidered muslins made at Dacca, and largely sold in India, Persia, Arabia, Egypt, and Turkey.

Kassa, a Newar imitation of the Indian malmal, used for turbans.

Khadi, a coarse cotton cloth.

Kurchar, felt for pillows.

Kimkhab, or gold and silver brocaded silk; a silk brocade. The kimkhab brocades are distinguished as suneri or golden; ruperi or silvery; chand-tara, moon and starry; dup-chan, sunshine and shade; maz-char, ripples of silver; palimtar-akahi, pigeons' eyes; bulbul-chasam, nightingale eyes; mohr-gala, peacock's neck; par-i-taos, peacocks' feathers.

Malida, red woollen cloth, woven like shawl cloth.

Mushroo, a fabric of cotton mixed with silk, with a cotton warp or back, and woof of soft silk in a striped pattern, having the lustre of satin or atlas.

Muslins, the finest or malmal-i-khas of Dacca were known as ab-rawan, running water; baft-howa, woven air; shabnam, evening dew.

Malmal-i-khas means special (king's) muslin.

Doria or striped muslin.

Charkhana or chequered muslin.

Jamdani or figured muslin.

Chikan or embroidered muslin.

Mundel, a cloth of cotton and gold, obtainable in Kutch; costs Rs. 8'4'11.

Nimbu, a woollen pile fabric.

Palampore (palang-posh), or bed-covers.

Panchan, white woollen cloth.

Pankhi, woollen twill.

Paranda, a silk material used as a hair ornament in Lahore.

Pashmina, or woollen fabrics.

Punika of Nepal, an imitation of the Dinapur tablecloth.

Purbi-khadi, a coarse cotton cloth manufactured by the Khassya hill tribes (Purbi, eastern).

Putasi, a blue and white check worn by Newar women.

Sianah, a woollen stuff of Nepal.

Sufi is the striped (gulbadan) silks, called also Shuja khani of Bahawalpur. They differ from mushroo in having no satiny lustre, and look like a glazed calico. They can scarcely be distinguished from sufi, and are glazed with a mucilaginous emulsion of quince seed. Mushroo and sufi are made plain, striped, and figured.

Tafta, a fabric of twisted thread.

Tappu, coarse cotton cloth of Nepal.

Takar, *Tussar*, *Tassah*, eria and munga, are made of wild silks.

Tusa, a coarse woollen fabric.

CLOVE, Mother clove.

Polang, . . . MALAY. | Ibu-changke, . . . MALAY.

'Mother clove' means seed-clove, clove fruits that have been allowed to grow to full maturity.

CLOVE BARK of eastern commerce is the bark of several species of cinnamon trees.

CLOVE OIL.

Huile de girofle, . . . FR.	Warala-tel, . . . SINGH.
Lavang ka tel, . . . HIND.	Lavangoo tailam, . . . TAM.
(Oleo de garafano, . . . IT.	Kirambu tailam, . . . TEL.
Minak-changke, . . . MALAY.	Lawanga tailamu, . . . TEL.

This is obtained from cloves by distillation. When new it is of a pale reddish-brown colour, which becomes darker by age. It is extremely hot and fiery, and sinks in water. The smell is agreeable, and not unlike that of koolfa, or Malabar cassia oil. The kind met with in Bombay is chiefly made at Surat.—*Faulkner*.

CLOVE PEPPER. Allspice, clove-pepper, or pimento, are Pimenta vulgaris berries, gathered while still green and dried in the sun; this well-known spice is also called sometimes Jamaica pepper, from its cultivation being chiefly confined to that island. The ripe berries, when dry, are almost devoid of flavour.

CLOVER, or trefoil, a name given to several species of the genus Trifolium grown in Europe. In India, a species of Hedysarum supplies the place of the species of Trifolium and Medicago in Europe.

CLOVER SEED.

Klaver-zaad, . . . DUT.	Trifolium, . . . LAT.
Semence de treffe, . . . FR.	Trilistnik, . . . RUS.
Kleesaat, Klee, . . . GER.	Trebol, . . . SP.
Trifoglio, . . . IT.	

Red and white clover seed, Trifolium pratense, L., and T. repens, L. Upwards of 155,000 cwts. were imported in 1870. Frequently adulterated with old and dead or kiln-dried seed, and with the cheaper hop clover, T. procumbens, L., etc.

CLOVES. Clavus, LAT.

Karnful, . . . ARAB.	Clous de girofle, . . . FR.
Buwah-luvung, . . . BALI.	Giroffles, . . . "
Lang-yen-bwen, . . . BURM.	Naglein, . . . GER.
Theng-hio; Theng-ki, CHIN.	Gewurmelken, . . . "
Ting-tze, Ki-cheh, . . . "	Luvung, . . . GUJ.
Ting-hiang, . . . "	Long, . . . HIND.
Kruid-nagelen, . . . DUT.	Garofani, . . . IT.
Nageln-boomen, . . . "	Chiovi di Garoffoli, . . . "

Woh-kayu-lawang, . . . JAV.	Lavauga, SANSK.
Chenki, Chapkee, MALAY.	Warrala, SINGH.
Bungalawang, "	Clavillos, SP.
Bunga changkco, "	Clavo de especia, "
Mehuc, Meykhek, . . . PERS.	Lavangam, TAM.
'ravos da India, . . . PORT.	Lawangama, TEL.
(iwodika, RUS.	

In a law passed by Aurelian the First, in A.D. 175 and 180, cloves are mentioned. The cloves of commerce are the unopened flower-buds of the clove tree, *Caryophyllus aromaticus*, which was originally a native of the Moluccas and of China, but is now cultivated in Penang, Sumatra, S. India, Bourbon, Zanzibar, Guiana, E. Africa, and the West India Islands. The clove tree may be seen in a few gardens on the Tenasserim coast, and in Travancore, Tinnevely, Canara, Cochin, and near Oodagherry, 1800 feet above the sea. They have the form of a nail, and when examined are seen to consist of the tubular calyx with a roundish projection, formed by the unopened petals. The flowers, produced in branched peduncles at the extremity of the bough, are of a delicate peach colour. The elongated calyx, forming the seed-vessel, first changes to yellow, and when ripe to red, which is from October to December, and in this state it is fit to gather. If left for a few weeks longer on the trees, they expand, and become what are termed 'mother cloves,' fit only for seed or for candying. In the gathering, the ground under the tree is first swept clean, or else a mat or cloth is spread. The nearest clusters are taken off with the hand, and the more distant by the aid of crooked sticks. Great care is taken not to injure the tree. The cloves are then prepared for shipment by smoking them on hurdles near a slow wood fire, to give them a brown colour, after which they are further dried in the sun. They may then be cut off from the flower branches with the nails, and will be found to be purple-coloured within, and fit to be baled for the European market. In some places they are scalded in hot water before being smoked, but this is not common. The tree begins to bear from the seventh to the fifteenth year, and is fruitful till it is 75 or 150 years old. The annual yield of a good tree is about 4½ lbs.; and the annual crop from Amboyna, Haruku, Saparna, and Nasalaut, was 350,000 lbs. of Amsterdam (Bikmore, p. 154). The companions of Magellan loaded two ships with cloves at the single island of Tidor, after a stay, from their arrival to their departure, of no more than forty-four days. The Portuguese made their first appearance in the parent country of cloves in the year 1512, and, until expelled by the Dutch in 1605, they had the principal share of the clove trade for 93 years, a period of rapine, violence, and bigotry. The main object of the Dutch was the exclusive monopoly of spices, by the expulsion of all rivals. They extirpated the clove trees in their native islands, and endeavoured to limit their growth to the five Amboyna islands, in which the clove is an exotic. Periodical expeditions for the extirpation of young plants, that might spontaneously have sprung up, or been propagated by birds, formed part of that system. The periodical exterminating expeditions became merely nominal after the year 1820, and have been discontinued. —M. E. J. R.; *Bikmore*, *Archip.* p. 115; *Simmonds*, *Com. Prod.*; *Crawford's Dictionary*; *McCulloch's Dictionary*.

CLUB-WOOD of Tahiti, *Casuarina muricata*.

CLUPEIDÆ, a family of fishes of the order Physostomi, placed by Cuvier between the Salmonidæ and the Gadidæ, and they form the fifth and last division of his section 'Malacopterygiens Abdominaux.' The family contains the following eighteen genera, the number of species of which are indicated:—

Cetengraulis, 2	Pristigaster, 7
Engraulis, 37	Chirocentron, 1
Coilia, 10	Spratelloides, 3
Chatoceus, 10	Duasmiera, 2
Clupea, 61	Etrumeus, 2
Clupeoides, 3	Albula, 1
Pellonula, 1	Elops, 2
Clupeichthys, 1	Megalops, 2
Pellona, 14	Chanos, 2

There are about 100 recognised and doubtful species of clupea. They inhabit every part of the globe, and several are found in the seas of south and east of Asia. One species in Ceylon is called the poisonous sprat. *C. pilchardus*, the pilchard, frequents the coast of Japan in the latter part of the month of June and commencement of July. They are taken by the seine nets. When fresh, they are sweet and nutritious; but they are chiefly valued for their oil, to obtain which they are piled up in heaps for twenty-four hours, are then boiled for some time in sufficient water to prevent their burning, then ladled into strong square presses, and the lever action of a lid presses out the oil. The oil after cleaning is used for lamps, and the refuse for manure.

CLUPEONIA PERFORATA, *Cantor*, inhabits the seas of Penang, Malayan Peninsula, Singapore, and Sumatra. Total length, 5½ inches. They are of delicate flavour, and pass in the Straits Settlements as sardines, in imitation of which they are sometimes preserved in oil. The general form, the yellow dorsal fin with a small black spot, give this species a certain resemblance to *Meletta venenosa* (C. et V. xx. 377). In 1822, at Sumatra, great numbers of what was supposed to be this species, presented the unusual appearance of having red eyes. Many natives, having eaten these fishes, were suddenly attacked with violent vomiting, which, in cases where remedies were not immediately applied, was known within an hour to terminate fatally. At the same time, the fishes with the ordinary silvery eyes were, as formerly, eaten with impunity. This phenomenon recurred at Bencoolen during the seasons of 1823 and 1825, but not of 1824. It was surmised that the poisonous fishes had fed on a gelatinous substance which at that season exudes from the beautifully-coloured coral reefs on that part of the coast of Sumatra. It is, however, more probable that the poisonous fishes were shoals of *Meletta venenosa*, an inhabitant of the Seychelles and the neighbouring seas, which happened in those seasons to visit Sumatra. *M. Valenciennes* describes this fish as being poisonous, and producing effects as noted above. In the Straits of Malacca, *Clupeonia perforata* has never been known to produce bad effects.—*Cantor*.

CLUSIACEÆ, one of the orders of plants according to the natural system of Lindley. The genera, *Garcinia*, *Mammea*, *Mesua*, *Calophyllum*, and *Kayea* are now usually arranged under *Garciniaceæ*. The genus *Clusia* was named after Charles de l'Ecluse, or Clusius, one of the most celebrated botanists of the 16th century. C.

flava, the yellow-flowered balsam tree, the mountain mango or wild mango of Jamaica, might well be introduced into India.

CLUYTIA COLLINA. *R. Amanoa collina, Baill.*
Madara-gass, . . . SINGH. Yodisa, . . . TEL.
Woodugu maram, . . . TAM. Kurasee, . . . "
Wodisha, Kadishen, TEL. Kursee, . . . "

A small tree of the Euphorbiaceæ, of Ceylon and the Peninsula of India, frequent in the Walliar jungles of Coimbatore; flowers in the hot season; seeds ripen in December and January. Bark or outer crust of the capsule said to be exceedingly poisonous. Wood red-coloured, exceedingly hard and durable, but of small size. Notwithstanding its hardness, being very even-grained, it is easily worked, and is, from its fine close grain, a pretty wood.—*Roxb.; Mr. Rohde's MSS.; Wight; O'Sh.; Thw.*

CLUYTIA OBLONGIFOLIA. *Roxb.* A tree of Assam and Sylhet; wood hard and durable.—*Roxb.; Voigt.*

CLUYTIA PATULA. *Roxb.*
Amanoa Indica, *W. Ic.* | *Cleistanthus patulus,*
Bridelia patula, *Hook.* | *Muller.*
Pala, TAM. | Jegura, TEL.

A tree of Southern India; grows to a large size, and logs measuring four to five feet in girth are purchasable in the market. The wood is pale red, the colour of dried rose-leaves, hard and durable, very brittle, sp. gr. 75·8, and when broken the fracture seldom shows a fibre. It is used for rulers, knobs, handles for tools, such as chisels, etc., and in turnery. It flowers during the hot season.—*Roxb.; Mr. Rohde's MSS.; Voigt.*

CLYDE, LORD, longer known as Sir Colin Campbell, whom Sir William Napier styled the war-bred Sir Colin. He was a military officer of the British army, and commenced his career as a volunteer with the 9th Regiment of infantry in the British army, which he accompanied to Portugal. He afterwards served in Holland at the disastrous expedition to Walcheren, and again in the Peninsula under Sir John Moore, and he was present at Viniera, Corunna, Barossa, Vittoria, and San Sebastian, at the siege of which he led the storming party, where he was again severely wounded, having been previously wounded at the passage of the Bidassoa. He was in the expedition of 1814 and 1815 to America. In 1842 he served in the war of China. In 1848 and 1849 in the Panjab campaign, at the passage of the Chenab, at Chillianwalla and Gujerat, and he was engaged against the hill tribes up to 1852. In the war in the Crimea he commanded the Highland Brigade, and to him was due the success of Alma; and he preserved Balacava against an attack of the Russian forces. The triumphal termination of his long career of war, however, was in India, to which he was sent in 1857, when the Bengal native army revolted, and much of Northern India was in rebellion. He gathered troops about him until he could advance, and he did so without a single check. He died at Woolwich at the close of the mutiny. A statue has been erected to his honour in Waterloo Place, London. See *Battles of India; British India.*

CLYPEA GLABRA. *W. and A.* This is the *Cissampelos glabra, Roxb.,* and *Cocculus Roxburghianus, D. C.* It is a native of Sylhet; root large, acrid, and used medicinally.

CLYPEA HERNANDIFOLIA. *W. and A.*

This is the *Cissampelos Hernandifolia, Willde.,* and *C. hexandra, Roxb.,* the Nimuka and Nimi muka, HINDI. It is a valuable diuretic.

COACH. Conveyances of kinds have been used from very early times in Tartary, Southern and Western Asia, in Hindustan, Asia Minor, Northern Africa, and Europe. See Carriage.

COAL.

Stinkull,	DAN.	Carvoes de pedra, . .	PORT.
Steenkoolen,	DUT.	Carvoes de terra, . .	
Steenkull,	"	Ugolj, Kamenoe, . .	RUS.
Charbon de terre, . .	FR.	Carbones de tierra, .	SP.
Steinkohlen,	GER.	" " piedra,	"
Valaiti kueta, . . .	GUJ.	Stenkol,	SW.
Carboni fossili, . . .	IT.	Simai Karri,	TAM.
Arang-tanah,	MALAY.	Sima Boggu,	TEL.

Coal differs considerably in its physical properties, and its varieties obtain various names in the markets. The mineralogist generally classes it as coal without bitumen, and coal with bitumen. The first variety is known by the general name of anthracite. It is sometimes very hard, has a high lustre, and is often iridescent. It is used for fuel, but it is often made into small inkstands, boxes, and other articles of use. This is more especially the case with the anthracite of America. Anthracite is the most common form of coal in the Welsh beds. The kinds are known in commerce as splint, caking, cherry, cannel, and brow or wood coals, also lignite and jet.

Coal was worked in Bengal in 1774 by Messrs. Heatly and Sumner of the Bengal civil service, who obtained a monopoly. Their operations were in the Raniganj coal-field, but they found it unprofitable, and the mines remained unworked till 1815, when Mr. Jones commenced operations. He too was unsuccessful; and in 1820 Messrs. Alexander & Co. undertook them. From that date collieries increased in number; and in 1859 so many as fifty were at work, employing 27 steam-engines, producing then 304,094 tons of round coal. During 1878 and 1879, in the Raniganj fields, 388,931 men and 196,627 women, with 27,277 children, were supported by mining operations, the out-turn of coal being 528,001 tons (*Tr. of Hind. i. p. 170*). The quantity of coals brought down in 1840 was about 15 lakhs of maunds. In 1850 it was nearly its double, and in 1860 it had become its quadruple. The supply and the consumption of coal in India during ten years was as under, in maunds of 80 lbs. :—

	Coal raised in all India.	Coal raised in Bengal.	Coal imported into Calcutta.	Total con- sumption in Bengal.
1859	99,61,928	99,61,928	12,29,160	1,11,91,088
1860	1,00,88,113	1,00,88,113	4,96,585	1,05,84,698
1861	78,06,252	77,85,085	12,85,203	90,70,288
1862	86,43,843	86,30,843	6,76,687	93,07,530
1863	95,12,174	95,04,975	10,36,407	1,05,41,382
1864	90,46,147	90,32,405	18,18,132	1,08,50,537
1865	88,37,953	88,10,425	16,16,143	1,04,26,568
1866	1,08,34,551	1,07,90,035	9,14,427	1,17,04,462
1867	1,18,61,031	1,18,47,178	11,46,734	1,29,93,902
1868	1,35,62,274	1,34,65,829	19,28,591	1,53,94,420

Of the coal raised in 1868, almost the whole was from the Raniganj field. One-half of the supply was consumed by the East Indian Railway, and was used for locomotives as far as Ambala.

Coal of British India occurs in the lower Gondwana system, palæozoic rocks, in which three series have been recognised, viz.,—

- (a) Damuda, Raniganj, or Kamthi.
- (b) Ironstone, shales, and Barakar.
- (c) Karharbari and Talchir.

The Karharbari group yield coal, but, except in some of the eastern fields of the Damuda valley series, the Barakar group includes all the valuable coal of Peninsular India. In the Jharia coal-field its thickness is estimated at 3800 feet, and at Raniganj 2000 feet.

The Raniganj group consist of sandstones, carbonaceous shales, and coal. The coal is of good quality, and comparatively uniform in composition and in the closeness of its seams.

In the rocks of the Kamthi group coal rarely occurs.

The areas of the 37 separate Indian coal-measures and associated younger rocks, which may conceal coal-measures, have been drawn up by Mr. Hughes as under, total 35,000 sq. m.:-

Godavery and affluents, . . .	sq. m.	Nerbadda and affluents, . . .	sq. m.
Sone,	11,000	Damuda,	3,500
Sirguja and Orissa,	8,000	Rajmahal area,	2,000
Assam,	4,600	Unsurveyed, etc.,	300
	3,000		2,700

The rocks which in Peninsular India probably correspond, as regards the time of their formation, to the true carboniferous rocks of Europe, are not coal-bearing; and the oldest coal-measures in British India belong to a period which is well included within the limits of the upper palaeozoic or permian and the lower jurassic formations.

The separate coal-fields are :-

- North of Damuda river, in Bengal, viz. Birbhum, Deogarh, Karharbari, and Rajmahal hills.
- Damuda valley, viz. Bokara, Jharia, N. and S. Karanpura, Ramgarh, and Raniganj.
- West of Damuda valley, viz. Aurunga, Chopé, Daltonganj, Hutar, and Itkuri.
- Sone and Mahanadi valleys, viz. Birsampur, Jhilmilli, Lakhanpur, Raigarh, and Hingir; Rampur, S. Rewa and Sohagpur; Udaipur and Korba, Tattapani; and in Orissa, Talchir.
- Central Provinces, viz., (1) Satpura region, Mopani, Pench, Tawa; (2) Godavery valley, Bandar, Kamaram, Singareni, Wardha or Chanda.
- Sikkim.
- Assam, in valley of Brahmaputra, viz. Disai, Jaipur, Jangi, Makum, Nazira.

There are other places in the N.W. Provinces, Assam, and Burma, where tertiary coal occurs, but it is not in sufficient quantity to constitute workable coal-fields. Of the above 37 separate coal-fields, five only (Raniganj, Karharbari, and Daltonganj in Bengal, and Mopani and Wardha in the Central Provinces) are at present (1881) worked with regularity.

Rajmahal hills form a series of low plateaus, which are situated at the point where the Ganges turns southwards to form the head of its delta. The coal-measures are exposed over 70 sq. miles, at Hura, Chuparbhita, Pachwara, Mhowagarhi, and Brahmani, but doubtless extend over a vastly greater area underneath the younger formations. —Ball, p. 68.

Birbhum and Deogarh have small detached basins in which coal occurs, but it is of little economic importance.

Karharbari has a field of coal of 11 square miles. It occurs in three principal seams, which have an average total thickness of 16 feet, spread over an area of $8\frac{1}{2}$ square miles. The amount of coal is estimated at 1,360,000,000 tons, and the available portion of it at 80,000,000 tons. It is worked by three companies.

Raniganj coal-field, of 11,200 sq. miles, is on the

rocky frontier of W. Bengal, 120 to 130 miles from Calcutta. The coal is in five groups, viz.,—

Upper Panchet or Mahadeva,	sq. m.	Ironstone shale,	sq. m.
Panchet,	500	Barakar,	1,400
Raniganj,	1,500	Talchir,	2,000
	5,000		8,000

It is the largest and most important of the areas in which coal is worked in India. It is worked by several European companies.

Jharia coal-field is in the valley of the Damuda river. It is 16 miles west of the Raniganj field, and has an area of 200 sq. miles. The estimated available coal here is 465,000,000 tons.

Bokara coal-field is in the valley of the Damuda. Its area is about 220 sq. miles, and the estimated available coal is 1,500,000,000 tons. One seam is 88 feet. Its position renders it difficult to be worked.

Ramgarh coal-field, in Damuda valley, has an area of 40 sq. miles. The coal is mostly of poor quality, and the field is unfavourably situated.

Karanpura coal-fields, S. and N., are at the head of the Damuda valley, and have areas of 72 sq. miles and 472 sq. miles respectively. The estimated amount of coal in N. Karanpura is 8,750,000,000, and in S. Karanpura 75,000,000 tons.

Chopé, on the Hazaribagh plateau, 2000 feet above the sea, has a small coal-field of less than one square mile.

Itkuri coal-field, 25 miles N.W. of Hazaribagh, has a few seams of inferior coal.

Aurunga coal-field, in Lohardagga district, W. of the sources of the Damuda, in the valley of the Koel, a tributary of the Sone, has numerous seams of coal, some of large size, estimated to contain 20,000,000 tons.

Hutar coal-field, in the Koel valley, has an area of 78.6 miles.

Daltonganj coal-field, in the valley of the Koel, in the Lohardagga district, has an area of 200 sq. miles; has a few coal-seams, estimated to contain 11,600,000 tons.

At Tattapani there is some coal, also a remarkable series of hot springs.

In S. Rewa and Sohagpur, a tract in the Sone valley, covering 8000 sq. miles, coal occurs; also at Jhilmilli (35 sq. miles), at Birsampur, a land-locked site in the central basin of Sirguja, its area being 400 sq. miles, and 1800 feet above the sea. Lakhanpur is S. of Birsampur, and Rampur adjoining it.

Raigarh and Hingir, Udaipur, and Korba are in a wide extent of coal-measures, which cover an area of 1000 sq. miles, in a country difficult of access, with seams up to 168 feet thick.

Talchir coal-field is in the valley of the Brahmani river, a tributary of the Mahanadi. It has an area of 700 sq. miles in extent, but the coal is of inferior quality, chiefly carbonaceous shale.

In the Satpura region, some good coal has been found at Mopani, and has been worked for the railway; and coal also occurs at Tawa and Pench.

In the Godavery valley, there are coal-fields at Bandar, in the Chanda district at Wardha; and Mr. Hughes gives the following estimate:—

	Actual Quantity, Tons, in millions.	Amount available, Tons, in millions.
Warora basin,	20	14
Ghugus,	90	45
Wun,	2100	1500
Between Wun and Papur,	105	50
Between Junara and Chaschole,	150	75
Sasti and Paoni basins,	60	30

And there are small areas at Dumagudium and Mudavaram.

At Kamaram, 40 miles N.E. of Warangal, is a small field; also at Singareni, 30 miles S.E. of Kamaram.

In the Darjiling district in Sikkim is a crushed coal, not of promising character; one seam is 11 feet thick.

In Assam, coal-fields have been explored at Makum, Jaipur, Janji, Nagira, and Desai. The coal is of good quality; and it has been discovered in the Khassya hills.

The coal of Dundeli, in the Jummoo territory, has proved to be like the rest of Eocene origin among nummulitic limestones. A large lump of it was in the Lahore Museum, and might pass for 'Wallsend,' so good is its appearance.

Coal at Bunu, from the Waziri hills, has been mentioned with some hope.

Coal of good quality is obtained from the Koh-i-Meeriah, a hill a day's journey north of the Oxus.—*Wood.*

The coal-fields of China occupy 400,000 sq. miles, and of Australia 240,000 sq. miles.

Messrs. Medlicott and Blandford describe as follows the coal-fields of British India, according to the epochs at which they were deposited:—

Jubbulpur has jet coal.

Rajmahal hills, Hura, Chuparbhita, and Brahmani coal-fields have occasional beds of inferior coal, poor and shaly, though of considerable thickness.

Tanguli, carbonaceous shales of no economic value.

Kandit Karaya field, thin 14-inch seams of coal.

Jainti or Karaun field, some thin coal-seams.

Karharbari, coal seams of variable thickness; coal equal to the best Raniganj coal; is the main supply for the E. I. Railway.

Raniganj coal-field, rich in coal-seams, some 20 feet thick. Jharia coal field, 13 to 16 miles from Raniganj, large quantity of very fair coal. Bokara, 2 miles W. of Jharia. Raniganj coal is composed of layers alternately bright and dull, as in the Barakars. The Bokara coal-field is near Hazaribagh. Rangarh coal-field, 3½ miles S. of Bokara. The S. Karanpura fields, W. of Bokara and Ranghar. Karanpura field is second only to the Raniganj field.

Chopé, a small coal-field on the top of the Hazara plateau.

Itkuri coal-field, 25 miles N.W. of Hazaribagh; inferior coal.

Daltonganj or Palemow coal-field; coal formerly worked and sent down the Sone.

Lathiagar, 26 miles S.E. of Daltonganj; a little coal.

S. Rewa coal-field.

Jhilmilli field, a very thin seam of good carbonaceous coal; several seams.

Bisrampur field, coal seams in several places, not very promising, 5 or 6 feet thick.

Lakhanpur field has several seams of coal, the best 5½ feet thick; part of excellent quality.

Chutia Nagpur, at E. Sirguja, Palemow, Jashpur, Udaipur, Khurea.

Korba (Bilaspur), an immense seam of coal, and in many places on the Mand and near Udaipur.

Raigarh-Hingir field, formerly called the Gangpur field, shaly beds, with coal-seams.

Talchir coal-field, on the Brahmani river, some beds of inferior coal.

Lametaghata.

Satpura basin; useful coal in the upper Tawa, the Kanhan and Pench valleys, in thin seams, and at Mopani on the Sita.

Bandar coal-field, 30 miles N.W. of Wardha, in the Chanda district, has three seams of coal, with 38 feet of maximum thickness.

Wardha or Chanda coal-field, in the basin of the Wardha, Pranhita, and Godavery; has a seam of coal and shale between 30 and 50 feet thick, but rising up

to 90 feet, with thinner seams, from which efforts have been made to supply the E. I. P. Railway.

Godavery valley has the Madavaram coal-field below Bhadrachalam, also the Bedda-danol field, 35 miles N.E. of Bhadrachalam, and N. of Ellore; some poor coal has been discovered by boring.

Kamaram coal-field, 40 miles E. from Warangal, has beds of coal, with coal of fair quality, in seams 6 to 9 feet thick.

Singareni coal-field, 25 miles N. of Khamamet, in the Godavery valley, has seams of coal, one of them 21 feet thick.

Ranikot group, in the Laki range, in Sind, has a bed of coal nearly 6 feet thick, but poor, with pyrites liable to spontaneous combustion, in cretaceous rock.

The Salt Range, amongst jurassic rocks, has thin strings and seams of tertiary lignite at Bhaganwala, Pidl, and Samundri.

Suliman range, thin layers of coal of no economic value.

Sabathu, in the Lower Himalaya, carbonaceous shale, has 25 per cent. of fixed carbon, and 11 per cent. of volatile matter partly hydro-carbon.

Khassya hills area, Cherrapunji plateau, amongst cretaceous rocks is a thick seam of bright coal, found in little basins near Cherra.

Garó area, cretaceous series, has coal of serviceable quality and thickness, immediately W. of Jadu Kata, in Umblai, in the Hublang, Garó hills, and in the coal basins of Rongreng and Darang, on the Upper Sumesari, of valueless coal; also at Salkura, Champagiri, and Mirampura, S.E. of Singmari.

Assam coal-fields are in the form of basins in the low Tipan hills, alternating shales, sandstones, and coals, known as the coal-fields of Jaipur, Makrum, and Nazira. There is a seam 100 feet thick, containing at least 75 feet of solid coal, a true coal of superior quality.

Tenasserim, on the Len-Ya river, is a bed of coal of a laminar structure, containing amber-like mineral resin. The coal is in thin laminae in isolated basins at Thathay-kyoung and Hein-lap, on the Great Tenasserim river, at places 7 feet thick of workable seam, and of fair quality, and 8 feet thick at Kau-ma-pyng. It is also found 3 feet thick on the Little Tenasserim river.

British Burma, 5 miles S. of Thayat-myo, a bed of coal of so irregular thickness as to be of no value.

Independent Burma, 50 miles above Ava, near Thinda-dau, are coal-seams 3 to 5 feet thick.

The Raniganj or Bardwan coal-field lies in the valley of the Damuda river, and is about 500 sq. miles. Some of the coal-seams are 20 feet thick, and one of the seams of the Barakar group is 33 to 35 feet; and in a section seen in the Kudia and Pasni streams, 175 feet of coal is exposed in a total thickness of 833 feet of rock, though much of it is of inferior quality. The Jeriah (Jharia) coal-field has seams up to 60 feet in thickness.

The coal found in the Talchir group, in the Jhilmilli field in Sirguja, is a very thin seam of inferior quality; and, as a rule, the Talchir formation is marked by an absence of coal-seams, and even of carbonaceous shale. Part of the Karharbari beds rest in apparent conformity on the Talchir group. Karharbari coal is dull-coloured, and tolerably homogeneous in structure, and the coal of some of the seams in the Barakar and Raniganj subdivisions of the Damuda series is more distinctly laminated, but is equal in quality to that extracted at Karharbari.

Carbonaceous shales, and one or two thin bands of jet coal, are met with in the Jubbulpur group, but it is very different from the coal of the Damuda valley.

The principal coal tracts of the rocks in the Rajmahal hills are the coal-fields of Hura, Chuparbhita, and Brahmani. Their seams are thick, but the coals are poor and shaly.

In the Gondwana series, Tanguli and the

Kandit Karaya field, and the Sahajori field, have small seams of coal of no economic value.

The general characters of the S. Rewa, the Jharin coal seams, the Bokara coal-field, and the Karanpura field, are the same as those of Raniganj. The quality of the coal is very variable; some seams yield good coal, others little better than shale.

The Ramgarh coal-field lies due S. of Bokara; the coal seams are numerous, and there are some good beds, but the quality as a rule is inferior.

The Chopé, Itkuri, and Daltonganj coal-fields are in the Hazaribagh district, and the coal of Daltonganj was formerly mined, and sent down the Sone river.

Good coal has been found in a few places in the Bismampur field, and at Lakhanpur, but that of many of their seams is poor, and the seams only 5 or 6 feet thick.

Coal occurs in Chutia Nagpur in many places on the Mand and near Udepur, of fair thickness and average quality; and a seam 90 feet thick is exposed in the bed of the Hasdo, much of it very shaly, and yielding much ash.

The Talchir coal-field is near the Brahmani river, and within the Mahanadi watershed.

In the Peninsula, the coal of the Wardha field is of rather inferior quality, giving 14 to 20 per cent. of ash. The Warora coal is of high mineral value. There may also be mentioned the Madavaram coal-field on the Godavery, and those of Kamaram and Singareni.

The coal beds of Tenasserim are not traceable continuously over any extensive area. The most important are at Thathay-kyoung and Hein-lap, on the Great Tenasserim river, the workable seam at the former place being 7 feet, and at the latter 17½ and 18½ feet thick, the quality fair; and at Kau-ma-pyng, nearly a mile N. of Hein-lap, is a seam 8 feet thick. A seam 3 feet thick occurs on the Little Tenasserim.

Deposits of coal have been found along the Siamese coast from Penang to the vicinity of Junk-Ceylon. In 1836, specimens of coal were brought from Trang, one of the lower provinces of Siam; and subsequently a deposit was discovered at Tama, not Gurbie. Coal was found at Sungei-Kamuning, about 16 miles above Trang, and at a place also nearly east of Pulo Mutiara, or Pearl Island, about 12 miles to the southward of Sungei-Kamuning. It was also found at the Pulo Tiga island, lying off Purlis, on the coast of Kedah. Another coal was found in the bay north of Tanjong Bumbong, on the coast of Trang, betwixt the last place and Kamuning.

The coal in Ligor and Kedah, on the west coast of the Malay Peninsula, is identical in composition, in the proportion of volatile matter to charcoal, with some kinds of cannel coal,—sp. gr. 1.245; volatile matter, 46.746; charcoal, 52.071; ash, 1.188 = 100. That found on the southern coast of the island of Junk-Ceylon (well known for its tin), and which occurs near the bank of a river, and about two or three hundred feet from its mouth, was reported by Professor Ansted as adapted for every purpose to which coal is economically applied.

A position indicated as a deposit of coal, is in lat. 7° 44' N., and long. 99° 15' E., the southern point of Pulo Lontar bearing S.W. by S., Telebon S.S.E., and Tanjong Cotton N.E. by N. Some of

it takes on the polish of fine jet. The Ligor specimens of this jet are the best.

In the coal of Ligor and Kedah, on the west coast of the Malay Peninsula, one portion of jet had a beautiful lustre and high polish. The fracture shows a fine velvet black or brownish-black.

On the Malay Peninsula, along the western coast at Katani, Ayer Ramni, and Bencoolen, at the entrance of the river Reteh, and along the banks in the Batang Gansal and the Inragiri, with, it is supposed, the Kampar, coal occurs.

Coal has been found in Sumatra, Java, and Luzon, and in Borneo, of good quality, suited to economical uses. Coal found at Kettie, on the south-east coast of Sumatra, bears a strong resemblance to that from Junk-Ceylon,—sp. gr. 1.23; volatile matter, 51.43; charcoal, 48.57; ash not determined. Coal of serviceable quality exists also in Banka and Madura (New Rotterdam Courant, Sept. 23, 1851), in Borneo proper (Low, Sarawak, p. 12), on Pulo Keng Arang, near the north end of Labuan, at various places on the west, south-west, and south-east coasts of Borneo, at the Bunut, on Pontianak, the country of Banjarassin, where immense deposits are found; Pagattan, and on the Koti river, mines are worked. A small field has been found near Macassar in Celebes, but the coal is of a worthless description (Singapore Free Press, July 19, 1850, which describes the coal treasures of the Archipelago). It is said that fine specimens have been obtained from the Philippine province of Almey (Mallat, Les Philippines, i. p. 122), but the existing notices of them are slight.

In Borneo, coal was first discovered in one of the islands in the river of Brunai, afterwards near the banks of the river, and subsequently in the island of Labuan. In these places it is mined by European skill and capital, and has been found, on ample trial, superior to any Asiatic coal hitherto tried. The coal on the left bank of the Borneo river has been traced for several miles into the interior, and on the southern coast of the island in the territory of Banjarassin, and mined by the Dutch. These may be continuations of the same field, which would make the Borneo coal-fields the largest in the world, after those of North America. Steam navigation has given a value to the coals of Borneo, which, without it, in a country inhabited by rude people and covered with forest, might have lain for ages as useless as the lime and sandstones in which it is imbedded.

In Borneo, coal is associated at Pulo Chirmin, which is about 200 feet high, with a ferruginous sandstone, and overlaid by a mass of red sand and clay. At Pulo Kang Arang, again, the coal is overlaid by white sandstone. Borneo, as a mineral country, is perhaps the richest in the East, producing gold, coal, antimony, and iron; while caoutchouc and gutta-percha are amongst its vegetable products. The coal and iron fields of the Balawi or Rajang are more extensive than any yet discovered on the island. From the river Baram, coal is traced to the upper parts of the Bintulu, and thence southward to the Rajang river, on the left bank of which, at Tuju-Nang, there is a seam exposed upwards of 13 feet in thickness. At different other parts of the river, and also in several of its branches, coal is found in abundance.

In China, coal is largely used for fuel. The

boats on the north river, below Nan-hiung, lie near the mouth of a horizontal drift worked into the mine, above which the cliffs are scraped down as the shaft advances. The mountains of Shan-si and Chih-li supply large quantities of this valuable mineral; and many boats find constant employment in bringing a coarse anthracite from Kai-chan in Lia-tung to Tien-tsin. One locality of the mine in Liau-tung is about $39^{\circ} 10' N.$, and $121^{\circ} 25' E.$ Anthracite and bituminous coal have been seen in marts at the north; and coal-dust and refuse is mixed with a little moistened clay at Pekin, and made into cakes for the fires of the poor. That which is brought to Canton is hard, and leaves a large proportion of ashes after combustion; during ignition, it throws off a suffocating sulphureous smoke, which prevents the natives using it for cooking. It is employed in the manufacture of coppers from hepatic iron pyrites, according to Du Halde, but is less frequently employed in the arts than it would be if the people knew better how to use it.

Coal is found abundantly at Ke-Lung in Formosa; also in the districts around Negata in Japan. The Russians, under the command of a Russian officer, have opened coal-mines rather lower than Tonquin Bay.—*Singapore Free Press*, April 2, 1852; *St. John's Indian Archipelago*, ii. p. 349; *Colonel Low*, No. 3, *Journ. Ind. Arch.*; *Williams' Middle Kingdom*, p. 242; *Hodgson's Nagasaki*, p. 227; *M'Culloch's Dict.* p. 287; *Journ. Ind. Archip.* iii. pp. 153, 161, 738; *Eng. Cyc.*; *Calc. Rev.*; *Annals, Ind. Admin.*; *Mason; Geology of India*, by Messrs. Medlicott, Blandford, and Ball; *Dr. Oldham in Yule's Embassy*, p. 335; *Hook. Him. Jo.*; *Powell; Crawford's Dict.* p. 195; *Ball on Diamonds, Coal, and Gold*, pp. 58-94.

COBALT.

Ta-t'ing, . . . CHIN. | Pien-t'ing, . . . CHIN.
Yang-t'ing, . . . , |

In China it is prepared by roasting the native arseniate of cobalt, said to come from Cambodia. It contains silica and potash, and is used in colouring glass, painting on porcelain, and glazing copper vessels, and in distemper. Cobalt ore occurs near Jeypore in Rajputana, and is used for colouring enamel. Cobalt and nickel occur in Ceylon, at Saffragam.—*Smith*.

COBRA, the ordinary Urdu name of the Naga genus of venomous colubrine snakes of the family Elapidae. There is only one species, the Naga tripudians, which has a moderate body, with rather short tail. It has a small or moderate eye, with a round pupil, a poison fang in front of the maxillary, which is but little moveable or erectile, and only one tooth behind. The anterior ribs are elongate and erectile, and the skin of the neck is dilatable. When the cobra rises in play, or for amusement, it spreads out the skin of the neck, from which it gets the Spanish name of cobra di capello, in English the hooded snake. Its bite, if the poison be fairly in, is almost certain death. It is said that the poison can be combated by injecting potash into the veins, but, owing to the rapidity of the poison's action, this, even if true, is valueless. Several instances have occurred of grown-up men recovering from the bites of the chain, etc., or Russell's viper (*Daboia elegans*), simply by applying ligatures above the wound, and burning the punctures with a live coal; but the after-swelling was very painful, and lasted for

some months. The cobra and chain viper are the commonest and deadliest. Notwithstanding this, the natives of Ceylon do not kill the cobra when caught, but enclose it in a mat bag with some boiled rice for food, and place it thus in a flowing stream. In Gujerat the Hindus do not kill this or any other snake. There are two varieties.

Var. *a*. The spectacled or binocellate cobra has its neck, on the steel-brown skin, marked with a white, black-edged \sqsubset or \sqsupset enclosing at either extremity a black ocellus. This is only seen when the hood is expanded. It is found in Southern India and in Burma (?). It grows to $5\frac{1}{2}$ feet.

Var. *b*. The monocellate, or one-marked cobra, has a plain white ocellus, with black centre and margin, and grows to 4 feet in length. It is the cobra of Central India and Burma.

The fangs of the cobra are not perforated like those of vipers, but they have a groove or slit right down the anterior part of the fang, and although the sides of the groove may often meet in close contact about the anterior centre of the tooth, and form a sort of a channel, yet they never join or amalgamate together. The fangs of cobras are fixed to the maxillary bones, while those of vipers are erectile.

Permanganate of potash has been recommended in cobra bites. When permanganate was mixed with cobra poison and hypodermically injected, no fatal result followed, although a fatal dose of cobra poison was used, and the mixture injected into the vein. It is supposed that the mongoose is not affected by the cobra poison.

In the mythologies of India, the cobra figures as a protecting agent, spreading its hood over the lingam and over royalty. The cobra is worshipped by all Hindus; and its form, as an idol, with three to nine heads, in stone or brass, may be everywhere seen in India, often bending over the idol of the lingam. The cobra is often personified in Indian story. In many parts of Western India, after killing a cobra, the non-Aryan races give it all the honours of a cremation, assuring it, with many protestations, that they are guiltless of its blood; that they slew it by order of their master; or that they had no other way to prevent its biting the chickens.—*Nicholson*.

COBRA-TEL, a term applied in Ceylon to a decoction of the heads of cobras and saliva of the iguana or Kabragoya, and supposed by the Singhalese to be deadly poisonous.

COCA of the Andes and Peru is *Erythroxylon coca*, Lam., extensively cultivated by the Indians.—the annual produce there having been estimated at 30,000,000 pounds. The leaves are either infused as tea, or, as is usual, chewed with a little unslaked lime. The immediate effect is a gentle excitement, with sensations of high enjoyment. Its use lessens the desire for food, and enables the chewer to undergo an enormous amount of fatigue, from an increased nervous energy.

COCANADA, a seaport town in the Godavery district, in lat. $16^{\circ} 57' N.$, long. $82^{\circ} 13' E.$; population, 17,839.—*Imp. Gaz.*

COCCIDÆ of Leach, the Gallinsecta of Latreille, a family of insects placed by Latreille and others at the end of the Homoptera. See Coccus.

COCCINEA INDICA. *W. and A.*

Coccinea grandis, *W.*

Bryonia grandis, *L.*

Momordica monodelpha, *R.*

Beemboo, . . .	BENG.	Kanduri, Gol-kundru, PAN.
Tela kucha, . . .	"	Vimbika, Jivika, SANSK.
Ken-bung, . . .	BURM.	Golaroo, . . . SIND.
Taa-tha-kwa, . . .	"	Kovay, . . . TAM.
Bhimb, . . .	HIND.	Donda, Bimbika, . . . TEL.
Kovel, Govel, . . .	MALEAL.	Kakidonda, Kai-donda, . . .

A climbing shrub, grows all over India; in flower and fruit the whole year; green fruit used in chatni and curries; ripe fruit eaten raw, and greedily sought after by birds. The leaves are applied externally in eruptions of the skin, and the plant internally in gonorrhœa.

The juice of the leaves is used as an application to obstinate ulcers produced by the bites of animals. The fruit when unripe has a slightly acid but not unpleasant taste. When ripe, it is sweetish but insipid. It is smooth, oblong, and about an inch and a half long. It is a common troublesome weed in hedges and gardens.—*Jaffrey; Roxb.; Voigt; Stewart; O'Sh.; Ainslie.*

COCCOLOBA, a genus of plants belonging to the natural order Polygonaceæ. *C. crispata*, Buch., grows in Nepal. Wight, in *Icones*, figures *C. Indica*, *C. excoriata*, *C. pubescens*. *C. uvifera* is a West Indian plant. The fruit of the last is sweetish, its wood is used for cabinet work, and it yields the Jamaica kino.—*Voigt; Eng. Cyc.*

COCCOTHAUSTES, a genus of birds belonging to the order Insesores, family Fringillidæ, and sub-family Fringillinæ. Three species occur in South-Eastern Asia. *C. vulgaris*, the hawfinch of Europe, occurs in Siberia, China, Japan (*C. Japonicus*, *Schlegel?*).

COCCULUS, a genus of plants belonging to the natural order Menispermaceæ, consisting of climbers, whose leaves are usually more or less heart-shaped, and the flowers small, and either white or pale green, in loose panicles or racemes; in most cases they are dioecious, and are always very minute. The species are usually powerful bitter febrifuges. The following occur in the south and east of Asia: *acuminatus*, *calophyllus*, *cordifolius*, *crispus*, *hexagynus*, *incanus*, *laurifolius*, *macrocarpus*, *Malabaricus*, *megaspermus*, *oleracea*, *Plukenetii*, *tomentosus*, *villosus*. In Arabia, an ardent spirit, called Khamr-ul-Majnun, is said to be distilled from the berries of *C. Cebatha*.

COCCULUS ACUMINATUS. D. C.

<i>C. radiatus</i> , D. C.	<i>M. polycarpus</i> , Roxb.
<i>C. polycarpus</i> , Wall.	<i>Tiliacora racemosa</i> , Coleb.
<i>Menispermum acuminatum</i> .	<i>T. acuminata</i> , Miers.
<i>M. radiatum</i> , Lam.	<i>Braunea menispermoides</i> , Willd.
<i>Tila kora</i> , . . . BENG.	<i>Vulli kaniram</i> , . . . MALEAL.
<i>Baga-lata</i> , . . . HIND.	<i>Tiga mushadi</i> , . . . TEL.

A trailing shrub; grows in both Peninsulas, Oudh, Assam; has small cream-coloured, sweet-scented flowers.—*O'Sh. p. 202; Voigt, 331.*

COCCULUS CORDIFOLIUS. D. C.

<i>C. convolvulaceus</i> , D. C.	<i>Menispermum glabrum</i> , K.
<i>C. verrucosus</i> , Wall.	<i>M. cordifolium</i> , Willd.
<i>Tain-tha-ma-nway</i> , BURM.	<i>Sitamerdur</i> , . . . MALEAL.
<i>Gul-bel</i> , Gulwail, DUKH.	<i>Shendi kodi</i> , . . . TAM.
<i>Guluncha</i> , . . . HIND.	<i>Tipatinggé</i> , . . . TEL.
<i>Cit-amerdu</i> , . . . MALAY.	

A valuable plant, growing in the Peninsula, of Bengal, Burma, and Assam. Its stem is succulent, twining, and perennial, running over the highest trees. The root, stem, and leaves are used in medicine in decoction. The root is large, soft, and spongy, and is given fresh in gonorrhœa; in powder, 15 to 30 grs. are emetic; the decoction is

called Pachuna. An extract called palo is prepared from the stem.—*Roxb. iii. p. 81; O'Sh.*

COCCULUS CRISPUS. D. C.

Menispermum crispum, L. | *M. verrucosum*, Flem.

A twining plant of Sumatra, Java, and the Moluccas, with a tubercled or warted stem; it is employed by the Malays for the cure of intermittent fevers.—*O'Sh.*

COCCULUS FIBRAUREA, of Cochin-China and China, used by the Malays in agues and liver diseases.—*O'Sh.*

COCCULUS INDICUS.

Hong,	BURM.	Taba-bidji, . . .	MALEAL.
Indian berry, . . .	ENG.	Mahi-zahra, . . .	PERS.
Coque de Levant, . .	FR.	Grana orientis of Ruellius.	
Fischkormer, . . .	GER.	Kakamari, . . .	SANSK.
Jermai,	GUJ.	Kaka colli verei, . .	TAM.
Kakmari-ki-binji, .	HIND.	Kaki-chempu vittulu, TEL.	
Galla di Levante, . .	IT.		

This is the fruit of the *Anamirta cocculus*, W. and A., a powerful climbing plant, common in the mountainous parts of the Malabar coast; in commerce its fruit is obtained through Bombay, Madras, and Ceylon. The berry is highly poisonous, and is not used internally in medicine. Even externally, as an ointment, though useful in *Porrigio capitis*, its use requires great care. It is used to poison fish, and a weak decoction to destroy ticks in sheep. In 1850, 2359 bags were imported into Britain, value 19s. to 24s. the cwt.—*O'Sh.; Royle; Roxb.; Eng. Cyc.; M'Cull. Dict.; W. and A.*

COCCULUS PALMATUS. D. C.

M. palmatum, Lam. | *M. columba*, Roxb.

This plant produces the columbo root of commerce, a valuable tonic medicine. It grows in the Mozambique forests, and is cultivated in the Mauritius.—*Roxb. iii. 807.*

COCCULUS VILLOSUS. D. C.

<i>C. sepium</i> , Coleb.	<i>M. hirsutum</i> , Linn.
<i>Menisperm. villosus</i> , Lam.	<i>M. myosotoides</i> , Linn.
Huyer,	BENG.
Dier, Farid-buti, .	HIND.
	Chipura tige, . . . TEL.
	Dusara-tiga, Katle tige, ,,

A decoction of the fresh roots is given in native medicine in rheumatism, and is considered heating, laxative, and sudorific. A curry of the leaves is used for the same object. The juice of the ripe berries makes a good, durable, bluish-purple ink. The withes are woven into small baskets, and are used for cords by the cultivators.—*Voigt, 331.*

COCCUS, a genus of insects belonging to the family Coccidæ, of the order Hemiptera. The insects belonging to this family live upon trees or plants of various kinds; they are of small size, and in the larva state have the appearance of oval or round scales. They are closely attached to the plant or bark of the tree they inhabit, and exhibit no distinct external organs. At certain seasons, when about to undergo their transformation, they become fixed to the plant, and assume the pupa state within the skin of the larva. The pupa of the male has the two anterior legs directed forwards, and the remaining four backwards; whereas in the female the whole six are directed backwards. When the males have assumed the winged or imago state, they are said to issue from the posterior extremity of their cocoon. In the spring-time the body of the female becomes greatly enlarged, and approaches more or less to a spherical form. In some the skin is smooth, and in others transverse incisions or vestiges of segments are visible. It is in this state that the

female receives the embraces of the male, after which she deposits her eggs, which are extremely numerous. In some, the eggs are deposited by the insect beneath her own body, after which she dies, and the body hardens and forms a scale-like covering, which serves to protect the eggs until the following season, when they hatch. The females of other species cover their eggs with a white cotton-like substance, which answers the same end. Of the species of this genus known in S. Asia, are the *C. cacti*, the cochineal insect, the *C. lacca*, which yields the stick-lac of commerce, and the *C. maniparus* of Arabia, that punctures the *Tamarix gallica*, and causes the exudation of the Arabian manna. There are two varieties of *Coccus cacti*, the true *Grana fina*, and the *Grana sylvestris*; and, after prolonged efforts on the part of Drs. James Anderson and Barry of Madras in 1795, the *C. sylvestris*, or wild species of the cochineal insect, was introduced into Bengal by Captain Neilson of H.M. 74th Regiment. It thrived rapidly on the *Cactus Indica*, the indigenous opuntia, the country Nopal, and between 1800 and 1807, 74,633½ lbs. of the cochineal, amounting to 142,916 rupees in value, were shipped to England, but at a loss, as the wild species was found greatly inferior to the true. The cochineal insect was introduced into Java about the year 1825 as a Government experiment, and apparently with more success in its production than in British India, for so long ago as 1844 it was exported from Batavia to the estimated value of 93,319 guilders. The species introduced into India swarms at certain seasons, and settles on one of the species of cactus, which they immediately destroy. The whole neighbourhood of Homanabad was surrounded with prickly pear, but disappeared in 1865, under one of these swarms.

The fine cochineal insect differs from the wild not only in size, but also in being mealy and covered with a white powder; while the wild one is enveloped in a thick cottony down, which causes its value to diminish greatly, it being impossible to separate it from the insect in the preparation of the dye; the females only yield dye. It is the cottony covering which enables the wild kind to stand the vicissitudes of climate, while the fine or domesticated kind require to be kept under cover during the rainy season, and sheltered from high winds, as they early in their growth throw off the cottony covering.

The fine cochineal insect lives on several cultivated kinds of cactus without thorns, of which the *Cactus cochinillifer* has been introduced into India. It will not grow on the wild prickly pear.

There are three periods of life of the cochineal insect. It is viviparous, and at its birth is a mere speck, and at that time no difference can be detected by a microscope between the sexes; they are all equally active, seeming to profit eagerly of the short period during which motion is allowed them. After a few days they attach themselves to the cactus plant, and from that moment the female never quits her hold. A cottony coat grows over her, which falls off in 13 to 15 days. This is the first period.

The male also adheres to the plant, and in about 12 days becomes enveloped in a cottony cylindrical purse, open at the bottom; the insects huddle together, one upon another to appearance, so that

at a little distance nothing is seen but a white patch of cotton of uneven surface; they continually increase in bulk. After remaining in this state for a month or thereabouts, the sexes become distinctly recognisable. The male becomes a scarlet fly, with two transparent wings about three times the length of his body, which exactly cover each other, when at rest appearing only as one; he is also provided with two poisers or tails and two hairy antennæ; he has six legs and six immoveable eyes. He is now again become active (particularly an hour after sunrise), but rarely takes to the wing, being easily carried away by the wind; he jumps and flutters about, and, having impregnated the female, dies in a few days.

The females go on increasing in roundness. They appear generally so enormously overgrown, that their eyes and mouth are quite sunk in their rugæ or wrinkles; their antennæ and legs are almost covered by them, and are so impeded in their motions from the swellings about the insertions of their legs, that they can scarce move them, much less move themselves, and the insect to the casual observer looks more like a berry than an animal. When they are about three months old they begin to yield their young. In this state the insect is in a torpid state, and may be detached from the plant. She had previously formed on her extremity an amber-coloured liquid globule, varying in size according to the abundance of juice in the cactus, and this is supposed to indicate the maturity of her pregnancy.

It is remarkable that from the moment of her fixing upon the plant, she loses her eyes and the form of her head; instead of a mouth, she has an extremely fine proboscis, which it is supposed she introduces into the imperceptible pores of the leaf she feeds on; and such is her excessive torpor, that once removed she will not attach herself again. After shedding the whole of her young, the mother dies, and becomes a mere shell, turning black. It is therefore at the time that the female commences to shed her young that measures are taken to remove the young to other cactus leaves. A nest is formed in the shape of a sausage or purse, of cotton gauze or other tissue pierced with small holes, in which 8 or 10 of the females are put, and the purse is fastened at the bottom of a leaf of cactus by a thorn. The young escape and spread themselves over the surface of the leaf. The mid-day is found to be the best time for this operation, to enable the newly-born insects to get rid of the glutinous matter which they bring from the parent. On this account nesting is not recommended in damp or cloudy days.

When the female insects are not required for breeding purposes, they are brushed off the cacti leaves at the commencement of their shedding their young, or immediately before that time, into baskets, and killed either by exposure to the sun or by immersion in boiling water, then dried and put into bags for dye.

As the cochineal insect is destroyed by heavy rains and high wind, they are reared outside only in the dry and cold season; during the rainy season a sufficient number of the females are either artificially kept in baskets shut out from light and heat, and so remaining torpid till the proper weather returns, or an entire generation is raised on cactus plants under cover in the house or a shed, and the fresh young ones put out on the

leaves outside when all danger from the heavy rains and wind are over.

The common belief is that the cochineal insect lays eggs; this is not the case. The young insects, whilst contained within the mother, appear to be all connected one after the other by an umbilical cord to a common placenta, and in this order they are in due time brought forth as living animals, after breaking the membrane in which they were at first probably contained as eggs. Being thus brought forth, they remain in a cluster under the mother's belly for two or three days, until disengaged from the umbilical cord. Every cochineal mother produces above a hundred young ones; but the mortality is great, and three or four mothers are required to cover one side of a cactus leaf with sufficient young for cultivation.

25,000 insects dead and dry make up one pound of cochineal, the ordinary value of which is 1 rupee 12 annas.—*Colonel Boddam; Royle, Prod. Res. p. 57; Crawford, Dict. p. 112.*

COCCUS LACCA, *Kerr*, produces the substance called lac. It inhabits India; is found on various trees in great abundance on the *Ficus religiosa*, *F. Indica*, *Croton lacciferum*, *Butea frondosa*, and *Rhamnus jujuba*. When the females of this coccus have fixed themselves to a part of the branch of the trees on which they feed, a pellucid and glutinous substance begins to exude from the margins of the body, and in the end this substance covers the whole insect with a cell which, when hardened by exposure to the air, becomes lac. So numerous are these insects, and so closely crowded together, that they often entirely cover a branch, and occasionally the tree is killed; and the groups take different shapes, as squares, hexagons, etc., according to the space left round the insect which first began to form its cell. Under these cells the females deposit their eggs, which, after a certain period, are hatched, and the young ones eat their way out. It is found encircling twigs and branches. The broken twigs covered with these incrustations are called 'stick-lac' in commerce. After the colour has been extracted and further purified, shell-lac results.—*Kirby and Spence, iv. p. 142; Eng. Cyc.*

COCCUS POLONICUS is used in dyeing a red colour. It is now chiefly employed by the Turks for dyeing wool, silk, and hair, and for staining the nails of women's fingers.—*Kirby and Spence, i. p. 320; Eng. Cyc. p. 44.*

COCHIN, a small feudatory state on the western side of the Peninsula of India, with a seaport capital of the same name, lying between lat. 9° 48' and 10° 50' N., and long. 76° 5' and 76° 58' E.; the area, 1361 square miles, and population in 1881, 600,278 souls. It has many marine lagoons, extending for 120 miles, and communicating with the sea; and its ghat forests have much valuable poon, angely, etc. Its rajas claim to be descended from Cheruman Perumal, who ruled over the whole country of Kerala, including Travancore and Malabar, as viceroy of the Chola kings, about the beginning of the 9th century, and afterwards established himself as independent ruler. Cochin fell to the Portuguese in the 16th century. In 1662 the city was taken by the Dutch; in the 18th century the Zamorin of Calicut held it for a short time; in 1776 Hyder Ali, and in 1790 Tipu, overran the country. On the fall of Seringapatam in the end of the

18th century, it became tributary to the British. By a treaty in 1791, the British guaranteed the integrity of the kingdom; but in 1809, after the overthrow of the Mysore government, a faction made common cause with the Travancore people, and carried on an unsuccessful war against the British, and in 1819 the British assumed all military control. The principal races are,—Maleali, 535,191; Konkani, 15,113; Tainular, 33,628; Teling, 9905. Of the population, 140,262 are Christians, 426,922 are Hindus, 12,499 Mahomedans, and 1278 Jews; the chief Hindu castes being Brahman, Kshatriya, Ambalavasi temple servants, Nair cultivators, Pillai government servants, Ottar contractors, Kanaka boatmen, Mopla polygars, Vallamar freshwater, and Marakan salt-water fishermen and artisans, Ezhuwan labourers, Cherumar predial slaves, and Kada and Maleali hillmen and Jews.

The Jacobite and Nestorian Christians are under the Archbishop of Antioch, the Romano-Syrians, under the Archbishop of Malabar, and the Romish Christians under the Archbishop of Goa. The cocoa palm is vastly cultivated; fish is very abundant; its ornamental work in metals, and its wood and ivory carving, are famed. The raja's family claim Kshatriya descent, but follow the rule of *mari makatayam*, or *descensus ab utero*, the children of sisters succeeding. If the raja's younger brother be senior to all his nephews, he becomes *elliah raja*, or heir-apparent; but if the raja's eldest sister have a son older than the raja's brother, the nephew ranks in the line of succession before the uncle.

The higher castes only are permitted to approach the royal dwelling, and handsome well-fed Brahmans, etc., thus form the entire population of that locality; and these are so clean and neat in appearance, and of so fair a colour, that one seems to have been transported among an entirely new and superior nation. The princesses and their ladies wear an abundance of snow-white muslin around the hips, but no upper garment. The neck is decorated with valuable ornaments, and the ears support very large and beautifully chased pendants. The hair is either worn in a large double knot on the crown, or on the right side of the head, and a band of gold strains it from off the face. The raja and all the princes are indistinguishable, in private, from the people around, for their dress consists simply of the muslin round the middle. The coconut palm grows abundantly, and, while yielding large returns, allows leisure for other avocations.—*Imp. Gaz.*

COCHIN-CHINA, the name given in Europe to a country occupied by the Annam people. The derivation of the European name is obscure, but *Kaobao* is the name given by the Annam people to the capital of Tonquin; and Cochin-China is known to the Malay navigators as *Kutchi*. It has been supposed by D'Anville that the *Sin-hoa* of Ptolemy, the geographer, is Cochin-China, and that the *Aureo Chersonesus* of Ptolemy is the Malay Peninsula. Leaving out of view the vast unexplored region of Laos, the peninsula commonly denominated Cochin-China is now composed of Cambodia in the north, French Cochin-China in the south and west, and Annam on the eastern coast, this latter kingdom extending northwards to the Chinese provinces of Yun-nan and Quang-si, its own province of Tong-king adjoining them.

French Cochinchina, conquered or annexed from Annam, comprises an area of about 30,000 square miles, and a population estimated at some 1,750,000 persons, nearly all of them Annamese nationality. The colony is divided into four provinces,—Saigon, Mytho, Vinh-long, and Bassac. Each of these is under inspectors and administrators, who are educated for the purpose in a college at Saigon, where they are taught the native language, characters, history, and law, and are instructed generally in the principles of executive government. They are commissioned by the President of the French Republic. The revenue for the year 1878 was estimated at 14,300,000 francs. The kingdom of Annam has a population estimated at 20,000,000 persons. There is a French resident at the Court of Hue, and also one at Hanoi, the ancient capital in Tong-king, and three ports in Tong-king have been opened under treaty. Europeans are only allowed to trade in the actual open ports, but they are allowed to pass through the country by means of the great river Sang-koi (but not to land on its banks) for purposes of trade with Yun-nan. The kingdom of Cambodia is an absolute monarchy, and has a population estimated at only 1,000,000, which gives but six to the square mile. It is under the protection of France, and that nation has an official residing at Nam-vang, the capital, with the title of Représentant du Protectorat Français. The revenue is estimated at 3,000,000 francs. There is but one port, Kampot, situated on the Gulf of Siam, its principal traffic being with Siam and Singapore by native vessels. In appearance, language, and most other characteristics, the Cambodians differ entirely from the Chinese, Annamites, and even Siamese. If there be any resemblance, it is to the latter.

Saigon, the capital of French Cochinchina, on the Saigon river, in lat. 10° 50' N., and long. 104° 22' E., was conquered by the Franco-Spanish fleet, 17th February 1859, by the force under Admiral Rigault de Genouilly at the close of the last Chinese war, but Lower Cochinchina was not occupied until the treaty of 1862.

About the reign of Louis XVI., the reigning emperor, Gyalong, lost his throne, and a Roman Catholic missionary, Bishop Adran, persuaded the deposed sovereign to ask the help of France, and escorted his son to the Court of Versailles. The request was granted, on condition that France should have a right of protectorate over native Christians, and the further right to occupy certain points of Annamese territory, from whence this protectorate might be better exercised. A treaty was concluded at Versailles on the 28th of November 1787, embodying these conditions, and the prince and bishop returned to the East with French officers and appliances of war, by whose aid Gyalong was restored to power, and gave him countenance and support, and the church grew and flourished; but his successors, jealous of its organization and influence, commenced a persecution.

On the 5th of June 1862 was signed the treaty which laid the foundation of French rule in Cochinchina, Annam thereby ceding the three provinces of Bienhoa, Giadinh, and Dinh Tuong, which constituted the original territory of Saigon. Twelve years later, the Duc Decazes, then minister for foreign affairs, was able to

announce to the French Chamber the signature (on the 15th of March 1874) of a treaty by which the whole country was placed under the protectorate of France. It has been mentioned that in 1867, five years after the first treaty, Admiral de la Grandière, the then governor, found it necessary to occupy the three additional provinces of Vinlong, Chandoi, and Hatien, in order to protect the colony from the incursions of 'agitators' from the neighbouring territory. The kingdom of Cambodia, embedded between Siam and the new colony, fell early under its influence, and by a treaty signed in 1868, accepted the protectorate of France.

In 1866-7, under the control of M. Doudart de Lagrée, an expedition explored the course and sources of the river Mei-kong, which, taking its rise amid the mountains of Tibet, impinges on the western provinces of China, flows through the whole length of the Indo-Chinese promontory, and discharges itself, in French territory, into the southern waters of the China Sea. It was hoped that in this river might be found a channel of intercourse with the west of China, and that Saigon might by its means be made to rival or eclipse the claim of Rangoon as an outlet for the commerce of those regions. In 1881 the boundaries were, on the north the kingdoms of Annam and Cambodia, on the east and south the China Sea, on the west the Gulf of Siam and the kingdom of Cambodia, 80 leagues long and 50 broad, with a population of 1½ millions. The Mei-kong passes through French Cochinchina by two rivers, to disembogue into the China Sea. In 1880 the revenue was 18,800,000 francs.—*Chin. Jap. and Phil. Chron. and Der.*, 1881.

COCHIN-CHINA MONKEY, *Pygathrix nemoeus*, Geoffr.

COCHINEAL.

Ya-lan-mi, . . .	CHIN.	Cochenilha, . . .	PORT.
Conchinilje, . . .	DUT.	Konsenel, . . .	RUS.
Cochenille, . . .	FR.	Cochinilla Grana, . . .	SP.
Koschenilje, . . .	GER.	Cochinil puchi, . . .	TAM.
Kermij, GUJ., HIND., PERS.		Cochinil purugu, . . .	TEL.
Cocciniglia, . . .	IT.		

This valuable dye and colour material consists of the dried bodies of the female of the *Coccus cacti*, a native of Mexico. About 1200 tons are imported into Britain, price 3s. 6d. the pound. It forms a very fine and permanent dye of red, crimson, scarlet. It answers on wool and silk, but not on cotton. Efforts were made by the E. I. Company to introduce the insect into India, and at the close of the 18th century it was supposed that Drs. Anderson and Barry of Madras had succeeded in doing so, but it is said that an inferior variety, *C. cacti sylvestre*, was the one brought, not the variety designated *C. cacti grana fina*. Whether from the stock introduced in 1799, or from an indigenous variety, the *Coccus cacti* is at seasons plentiful in many parts of India. They swarm to localities where the prickly pear grows, and in a brief time the plant wholly disappears. The fine variety was introduced into Mysore from Teneriffe; and at the Madras Exhibition of 1857, the cochineal exhibited from Chittaldroog and Oossoor was said to be the silver grain, and to be procurable in several districts in Southern India; but it only destroys the plants with red flowers and few prickles, and will not propagate on the yellow-flowering prickly

pear. It has been exhibited from Java at the exhibitions in Europe. The people have also been successful in introducing it into the Canary Islands, where it has of late been much cultivated; and in 1856, 1,511,617 lbs. were exported. About 1200 tons are imported into Britain, valued at £400 the ton. The insects are about 70,000 to the pound. They are detached from the plants on which they feed by a blunt knife; are dipped in boiling water to kill them, and then dried in the sun. The female is placed on the leaf, and kept in its position by a white rag tied round the lobe. From the travels of Lieutenant Burnes and Dr. Gerard, we learn (Journ. As. Soc. of Bengal, ii. p. 652) that an insect, supposed to be of the coccus genus? is found on the root of a plant which flourishes in a marsh (near Herat), but the natives being unable to dry it, import it from Bokhara and Yarkand, paying about 32 sicca rupees per Indian seer. *Coccus polonicus*, the scarlet grain of Poland, is also found on the roots of a plant, the *Scleranthus perennis*.—*Royle; Mad. Ex.* 1857; *Powell, Panj.* p. 194; *Crawford's Dict.* p. 112; *M'C. Dict.*; *Moral and Material Progress*; *Colonel Beddome*.

COCHLEARIA ARMORACIA. *Linn.*

Radish, horse radish, *ENG.* | Muli, *HIND.*
Cran de Bretagne, . . *FR.*

COCHLOSPERMUM GOSSYPIMUM. *D. C.*

Bombax gossypium, *L.* | Silk-cotton tree, . *ENG.*
Shima-punji, . . *MALEAL.* | Tanaku maram, . . *TAM.*
Ela-imbul, . . *SINGH.* | Konda gogu chettu, *TEL.*

This silk-cotton tree grows in Travancore, on the Coromandel coast, is common on the Arakan mountains, and occurs also in Bundelkhand, on the hills round and near Adjigurh and Kalingur, as well as on those near Hurdwar and the Kherce pass. The leaves are used for the curious rude leaf-bellows with which the natives of the hills near the Assam valley smelt iron. It has curious thick branches, which spread out somewhat awkwardly, each tipped with a cluster of golden-yellow flowers, as large as the palm of the hand, and very beautiful. The bark abounds in transparent gum, of which the white ants seem fond, for they kill many trees. This is the gum katira of the N.W. Provinces of India, and is substituted for tragacanth. Wood soft, and only used as fire-wood. The cotton of its pods is used for stuffing pillows, &c.—*Roxb.; O'Sh.* p. 225; *Stewart; Hooker, Him. Jour.* i. p. 53; *Voigt*, p. 91.

COCK, the male of the domestic fowl of the genus *Gallus*. One species of *Gallus* is found in the wild state in the Malay Peninsula, two in Sumatra, two in Java, and one in the Philippine Islands. But no bird of the genus in the wild state is found in Borneo, Celebes, or any island of the Molucca Seas. The two of Java are distinct species; they will pair, and the progeny is a beautiful bird, kept by the wealthy Javanese as an ornament of their poultry-yards, under the name of *pakiser*. The wild fowl of the Philippines are sometimes tamed, are very brave, and always come off victors with the large cocks of China; and they will contend with the famous gallant breed of the Loguno. Most of the advanced nations of the Asiatic islands are gamblers, and the favourite shape which gaming takes with them is cock-fighting. This includes the people of Bali, Lombok, Celebes, and all the Philippine Islands, the only material exception being the

Javanese. The passion for cock-fighting is impressed on the very language of the Malays. Thus there is a specific name for cock-fighting, one for the natural spur of the cock, and another for the artificial; two names for the comb, three for the crow of the cock, two for a cockpit, and one for a professional cock-fighter. The passion is nowhere carried further than in the Spanish dominions in the Philippines. There it is licensed by the Government, which derives from it a yearly revenue of about 40,000 dols., or about £10,000. Nations of Central Asia seem, from time immemorial, to have used the cock in sacrifice, being especially sacred to the sun in Sabæan worship. And this still continues. It is offered in sacrifices on the new-year's day by the old Parsee fire-worshippers. The Aryan Hindu and the non-Aryan races all sacrifice the cock at the shrines of the earth goddesses.—*Crawford, Dict.* p. 113. See Birds.

COCKATOO, birds of the Moluccas and Australia, of the tribe *Scansores* and sub-family *Cacatuinæ*. See Birds.

COCKLE, one of the mollusca. The cockle of Job xxxi. 40 is a species of *Solanum*. See *Chamidæ*.

COCK'S CLAW FRUIT.

Ki-chau tsze, . . . *CHIN.* | Kimi ponnass, . . . *JAP.*
Ki-tsu tsze,

This is the fruit of the *Hovenia dulcis*.—*Smith.*

COCK-UP, the Begti fish of the Ganges.

COCOA.

Ko-ko, Kwo-kau, *CHIN.* | Kakao, *GER.*
Cacao, *FR.* | Cacao, . . *IT., PORT., SP.*

Cocoa, also written Cacao, is the nut or seed of the *Theobroma cacao*, a plant of the W. Indies and the continent of America. Lindley mentions also *T. bicolor*, and *T. Guineensis*. *T. cacao* has been introduced into India, Ceylon, the Philippines, Celebes, Amboyna, and China. The cocoa tree flourishes best in the alluvial soil of mountain valleys, though it will grow well at some elevation on mountain-sides. The varieties are numerous, some producing very superior fruit to others. The plants begin to bear at from 5 to 7 years of age; during this period the inter-spaces between the rows of trees can be rendered productive by planting yams and vegetables in them. A free ventilation of air should be ensured to each tree, and this cannot well be attained with a smaller space than 30 feet. Large forest trees of favourable sorts require to be scattered amongst them, to protect them; the tree used for this purpose in the W. Indies and S. America is one of the *Bombacæ*. There are two crops in a year. The average return, when the trees are planted close together, is from 1 to 3 lbs.; but as much as from 9 to 16 lbs. may be procured by proper planting and cultivation. Great care is required in curing the cocoa, after it is separated from the pod; and on the method of fermenting and drying depends very much the production of a good or bad article. According to its preparation, it realizes from 60s. to 120s. per cwt. in bond. 17,000,000 lbs. of cocoa were imported into Britain in 1871, upwards of 7,300,000 lbs. being entered for home consumption. Cacao seeds were made use of by the Mexicans, previous to the arrival of the Spaniards, boiled with maize, and roughly bruised between two stones, and eaten seasoned with capsicum or honey. The seeds are contained in a husk 4 or 5 inches in length; and dried, roasted,

and ground, they constitute cocoa; mixed with starch and finely ground, soluble cocoa. Chocolate is the same flavoured and made up into a paste. As seen in the market, cocoa is in the form of flake, granulated, soluble, rock, dietetic, homœopathic cocoa, broma, etc., largely adulterated with 5 to 50 per cent. of sugar and starch. Flake cocoa generally contains the worthless husk, which forms about 12 per cent. of the seeds; but genuine flaked cocoa of good quality cannot be purchased under tenpence or one shilling per pound, yet it is no uncommon circumstance to see, in London shop windows, samples ticketed fivepence and sixpence per pound; such samples at this price must either be damaged or adulterated. Cocoa contains the alkali theobromine, in which there is a larger amount of nitrogen than in theine, so that tea, coffee, and cocoa may all be regarded as containing the same nutritious principle.—*M. E. J. R.*; *Hassall*; *Simmonds*; *Crawford*; *Kew Museum*; *Royle*.

COCOACEÆ, the palm tribe of plants, the *Palmaceæ* of Lindley, are inhabitants of the tropics of both worlds, and hardly range beyond lat. 35° S. and 49° N. They are local plants; only *Cocos nucifera*, *Acrocomia sclerocarpa*, and *Borassus flabelliformis* being found in many lands. There are supposed to be about 1000 species, but scarcely a fifth part have been described. The *Oreodoxa oleracea*, or edible cabbage-tree of the W. Indies, has been introduced into the East. The *Areca catechu* is well known for its betle-nut; the *Arenga saccharifera* for its sago, palm-wine, sugar, and black horse-hair like fibres. *Caryota urens* valuable for the immense quantity of its sap, which is fermented into toddy or palm-wine, or distilled into arrack. Canes and rattans are from the various species of *Calamus*. The *Sagus lævis* and *S. farinifera* yield much of the sago of commerce. The *Borassus* or *palmyra* is of great value for its palm-wine, its fruit, and its leaves, as also is the fan-palm *Corypha umbraculifera*, the talipot palm of Ceylon and the Moluccas; while *C. taliera* is of great value for its leaves, which are formed into the palm books, on which the people write with an iron style. The date fruit, on which so many of the Arabs subsist, is from the *Phoenix dactylifera*; the *P. sylvestris* of India furnishes sap which is made into palm-wine, sugar, or arrack; and the widely-spread coconut tree, *Cocos nucifera*, with its multitude of uses, all belong to this order. Recently, the following have also been noticed:—*Plectocomia elongata*, *Mart.*, of Java; *Ceratolobus glaucescens*, *Bl.*; *Dæmonorops melanochætes*, *Bl.*; *Lodoicea Seychellarum*, *Labill.*, Seychelles; *Hyphæne coriacea*, *Gærtn.*, of Egypt.

The better known of this order are as under:—

A. *Areceæ* or *Areceæ*.

<i>Chamedorea gracilis</i> , <i>Willd.</i> , introduced.	<i>A. Dielsonii</i> , <i>Roxb.</i>
<i>Hypophorbe Indica</i> , <i>Gært.</i> , Bourbon, introduced.	<i>A. triandra</i> , <i>Roxb.</i>
<i>Oreodoxa oleracea</i> , <i>Endl.</i> , W. Indies, introduced.	<i>A. gracilis</i> , <i>Roxb.</i>
<i>O. regia</i> , <i>Homb.</i> , introduced.	<i>Seaforthia elegans</i> , <i>R. Br.</i>
<i>Areca catechu</i> , <i>Spr.</i>	<i>Harina caryotoides</i> , <i>Buch.</i>
<i>A. crinita</i> , <i>Bory.</i>	<i>Arengasaccharifera</i> , <i>Labill.</i>
	<i>Caryota urens</i> , <i>Linn.</i>
	<i>C. horrida</i> , <i>Jacq.</i>
	<i>C. sabelifera</i> , <i>Wal.</i>

B. *Lepidocaryeæ*.

<i>Calamus humilis</i> , <i>Roxb.</i>	<i>C. latifolius</i> , <i>Roxb.</i>
<i>C. erectus</i> , <i>Roxb.</i>	<i>C. rudentum</i> , <i>Lour.</i>
<i>C. draco</i> , <i>Willd.</i>	<i>C. vorus</i> , <i>Lour.</i>

<i>C. extensus</i> , <i>Roxb.</i>	<i>C. monoicus</i> , <i>Roxb.</i>
<i>C. quinquenervius</i> , <i>Roxb.</i>	<i>C. hostilis</i> , <i>Wall.</i>
<i>C. rotang</i> , <i>Linn.</i>	<i>Zalacca edulis</i> , <i>Reinw.</i>
<i>C. fasciculatus</i> , <i>Roxb.</i>	<i>Z. Asamica</i> , <i>Wall.</i>
<i>C. polygamus</i> , <i>Roxb.</i>	<i>Sagus lævis</i> , <i>Rumph.</i>
<i>C. tenuis</i> , <i>Roxb.</i>	<i>S. farinifera</i> , <i>Gærtien.</i>
<i>C. gracilis</i> , <i>Roxb.</i>	

C. *Borassæ* or *Borassineæ*.

<i>Borassus flabelliformis</i> , <i>L.</i>	<i>Bentinckia condapana</i> , <i>Berry.</i>
<i>Lantania borbonica</i> , <i>Lam.</i>	

D. *Coryphææ* or *Coryphineæ*.

<i>Corypha utan</i> , <i>Lam.</i>	<i>Sabal Adansonii</i> , <i>Guerns.</i>
<i>C. umbraculifera</i> , <i>Linn.</i>	<i>S. hystrix</i> , <i>Nutt.</i>
<i>C. taliera</i> , <i>Roxb.</i>	<i>Chamærops humilis</i> , <i>Linn.</i>
<i>C. elata</i> , <i>Roxb.</i>	<i>C. mitis</i> , <i>Mayer.</i>
<i>C. rotundifolia</i> , <i>Lam.</i> , Mo- luccas.	<i>C. Griffithiana</i> , <i>Wall.</i>
<i>Livistonia Mauritiana</i> , <i>Wall.</i>	<i>C. Martiana</i> , <i>Wall.</i>
<i>Licuala peltata</i> , <i>Roxb.</i>	<i>Bhapis flabelliformis</i> , <i>Ait.</i>
<i>L. pumila</i> , <i>Bl.</i> , Java.	<i>Phoenix acaulis</i> , <i>Buch.</i>
<i>L. spinosa</i> , <i>Wurm.</i>	<i>P. dactylifera</i> , <i>Linn.</i>
<i>L. rotundifolia</i> , <i>Bl.</i> , Java.	<i>P. farinifera</i> , <i>Roxb.</i>
	<i>P. sylvestris</i> , <i>Roxb.</i>
	<i>P. paludosa</i> , <i>Roxb.</i>

E. *Cococæ* or *Cocoinæ*.

<i>Eleis Guineensis</i> , <i>Jacq.</i>	<i>C. flexuosa</i> , <i>Mart.</i>
<i>Cocos nucifera</i> , <i>Linn.</i>	

COCOANUT.

Hu.	ACHINESE.	Noc de Cacao.	IT.
Narikal,	BENG.	Kalapaa,	MALAY.
Cocos,	FR. SP.	Tengai,	TAM., MALAL.
Kocos-baum,	GER.	Tenkaia,	TEL.
Narel,	HIND.	Narekadam,	"

Cocoanut, the fruit of the *Cocos nucifera*, is a word supposed to come from the Portuguese term *Macaco* or *Macoco*. Its fruit-bearing power may be considerably improved by extracting toddy from the blossom shoots for the manufacture of jagari during the first two years of its productiveness, after which it may be discontinued. The subsequent annual produce may be safely reckoned at fifty nuts per annum. From ten to twelve large nuts may be seen on each bunch. In good situations, the fruit is gathered four or five times in the course of the year. The albuminous substance within the 'copra' or kernel is used as an article of food, and when dried is largely exported to other places; and the clear, sweet liquid which the nut encloses when young, is a very agreeable drink; it is the albumen in a liquid state. House plasterers attribute an adhesive quality to this, and mix it with their white and other washes, in which lime forms a chief ingredient. The full ripe nut contains a small quantity of oily milk, and is then used for making oil. Cocoanut milk is extracted by pressure, and is used in making curries, etc. It is from the husk of the cocoanut that the well-known 'coir,' khor, or roya fibre of commerce is prepared, and used for the manufacture of coir rope, matting, brushes, etc. Cocoanut husk, from which the fibres have not been separated, is used in lieu of a scrubbing-brush for the floor, and for polishing wood; brooms, mats, and bags are likewise manufactured from it. Cocoanuts, both in the raw and dried state, form a prominent feature amongst the exports at Galle and Colombo, in value to about £14,000 yearly. Cocoanuts valued at £50 a ton are imported into Great Britain. The shell is very brittle, and its structure is somewhat fibrous; but it admits of being turned for the bodies of cups and vases, the feet and covers being made of wood or ivory. Common buttons are also made of the cocoanut shell, and are considered better than those of

horn, as they do not, like that material, absorb moisture which causes them to swell and twist. The hollow shells, called 'gari' or 'naryel,' are used for the water-holder of a particular kind of hookah. The nuts are made into hookahs, goblets, and cups, and when mounted with silver, polished and carved, are very handsome; but for everyday household use they are made into lamps, ladles, skimmers, and spoons. The shells make good lamp-black, and when reduced to charcoal and pulverized, an excellent dentifrice. The cocoanuts are hourly used as offerings for Hindu idols. The cocoanut, when fully ripe, can be hollowed and cleaned, by being filled with salt water and buried for some time in the sand, when the albumen decays, and is washed out. In the Travancore and Cochin kingdoms, the kernel is variously cut for making garlands for state occasions. The uppermost and tender shoots of the cocoanut tree, when boiled, eat like cabbage, and are much prized both by Europeans and natives.—*Ainslie*, p. 245; *Seeman*; *M. E. J. R.*; *Royle*; *Tredgold*.

COCOANUT CRAB, the *Birgus latro*, or robber crab of the Keeling islands, is a kind of intermediate link between the short and long tailed crabs, and bears a great resemblance to the Paguri. Darwin observed that they live on the cocoanuts that fall from the trees. The story of their climbing these palms and detaching the heavy nuts is merely fabulous. Its front pair of legs are terminated by very strong, heavy pincers, the last pair by others narrow and weak. To extract the nourishment, it tears off the husk, fibre by fibre, from that end in which the three eyes are situated, and then hammers upon one of them with its heavy claws until an opening is effected. It then, by its posterior pincers, extracts the white albuminous substance. It inhabits deep burrows, where it accumulates surprising quantities of picked fibre of cocoanut husks, on which it rests as on a bed. Its habits are diurnal; but every night it is said to pay a visit to the sea, perhaps to moisten its branchiae. It is very good to eat, and the great mass of fat accumulated under the tail of the larger ones, sometimes yields, when melted, as much as a quart of limpid oil. They are esteemed great delicacies, and are fattened for the table.—*Darwin*; *Hartwig*; *Bikmore*.

COCOANUT DAY occurs on the full moon of the Hindu month, generally falling in August. Along the Malabar coast, at every seaport town, Cocoanut day is one of the great feasts. It is supposed to mark the termination of the S.W. monsoon, the date when the Hindu trader may safely trust his ships and goods to the ocean. At Bombay, the natives, clad in their holiday attire, go in procession from their houses in the town to the sea-shore, preceded by bands of music. On the beach, after numerous ceremonies, a cocoanut, generally covered with gold and silver leaf, is then cast into the sea, as an offering, by the principal person present. Every trader or boat-owner there makes a similar offering on his own account. The first boat of the season generally puts to sea directly after, gaily decorated with streamers. In former days, the chief civil functionary at the E. I. Company's factories, at such places as Tanna, Surat, and Broach, used to attend and sometimes cast in the first cocoanut; but this practice was 1 by orders from the Court of Directors.—*Mad. Lit. Jo.*; *Elph. Ind.* 414; *Chow-Chow*, 290.

COCOANUT, DOUBLE. The double cocoanut of the Seychelles or Mahe islands, is the fruit of the *Lodoicea Seychellarum*. When whole, and perforated in one or two places, the nut serves to carry water, and some of them hold six or eight pints; and by slicing them in different directions they are formed into plates, dishes, drinking cups, etc., known in the French islands as *Vaisselle de l'île Praslin*. The half of a double cocoanut is a favourite scallop of the Mahomedan fakir in India. The crown of the trunk is eaten, like the American cabbage-palm; the down attached to the young leaves serves for filling mattresses and pillows; the ribs of the leaves and the petioles are fabricated into baskets and brooms; and the young leaves are plaited to form hats. The *Lodoicea* attains a height of 80 or 90 feet. It might be largely introduced into India with advantage. Germinating nuts were sold in London in 1854 at £10 a-piece.—*Seeman*.

COCOANUT FIBRE, or Coir, is obtained from the outer rind of the nut. This is bruised and steeped in water for two or three days, after which it is taken up, and the fibres separated by the fingers, scraped gently with a blunt knife, and then dried in the sun. If steeped in water too long, they get coloured.

COCOANUT MILK. To make this, the kernel is grated, a little warm water is poured over it, and the liquid is then poured through an open cloth. This milk is excellent with coffee, and is indispensable for curry.

COCOANUT OIL.

Narel ka tel, . . .	HIND.	Kalambir, . . .	MALAY.
Minak nur, . . .	MALAY.	Tengai yenne, . . .	TAM.
Minak kalapa, . . .	"	Tenkala nuna, . . .	TEL.

The kernel, having been removed from the shell and dried, is subjected to pressure in a mill, and the oil is expressed; but when prepared in small quantities, the kernel is boiled in water for a short period; it is then pounded in a mortar, taken out and pressed. The milk, as it is called, which exudes, is then boiled over a slow fire, when the oil floats to the top, and, being skimmed off, is afterwards boiled by itself. Two quarts of oil may be procured from fourteen or fifteen cocoanuts. When fresh, the oil has an excellent flavour. It is used as an unguent on the bodies of the natives after bathing, and as an oil for the hair; it is employed as a lamp oil, and is manufactured into soap, and it is said to have all the virtues of cod-liver oil. The purest oil is obtained by grating the kernel, and depositing it in some hollow vessel, to expose it to the heat of the sun during the day, and the oil drains away through hollow spaces left for the purpose. The Malabar method of making the oil is by dividing the kernels into two equal parts, which are ranged on shelves made of laths of the betel-nut palm or split bamboo, spaces of half an inch wide being left between each lath. Under these a charcoal fire is lit, and kept up for two or three days, in order to dry them, after which they are exposed to the sun on mats, and when thoroughly dried are subjected to pressure in an oil-press. The remains of the cocoanut, from which the oil has been extracted (*Posknakkull*, HIND.; *Tenga poonak*, TAM.; *Tenga pindee*, TEL.; *Poonnak*, SINGH.), affords an excellent material for feeding pigs, poultry, etc. The best oil exported is from Cochin, and the neighbouring ports on the Malabar coast. It usually

fetches 20s. per ton more than the Ceylon or Coromandel coast article. In Europe it is used for the candle and soap manufacture, for lubricating machinery, etc. In India, for making soap, for cookery, lamps, and as medicine. This oil forms the foundation of Price's patent candles. It becomes solid at about 70° Fahr. It is one of the fixed or fatty oils, and consists of solid and fluid constituents, the latter, or oleine, being separated by pressure from the solid parts, called stearine or cocoin, used in the manufacture of the stearic candles. It is also much used by pomatum manufacturers. In Borneo, the only oil used by the women in the dressing of their hair is that freshly expressed from the cocoanut; and this is perfumed by allowing the flowers of various plants to remain in it. The native oil-mill is similar in shape to the mortar and pestle of the druggist, the latter being worked by a shaft, to the end of which a pair of bullocks are attached. The cattle travel in a circle of about 18 feet diameter, and make three complete revolutions in a minute. Half a hundredweight of the dried kernel is a charge for a full-sized checkoe (mortar), and a pair of stout, well-fed bullocks will get through four such charges in a day; so that twenty mills are required to get through two tons in the twenty-four hours. The man who drives has usually a boy to assist him in taking the oil, which is got out of the mortar by dipping a piece of rag into the fluid and squeezing it into an earthen vessel. The cost of the native oil-mill, with serviceable bullocks, is rather under than over Rs. 200.—*M. E. Jur. Rep.; Cal. Rev.*, Sept. 1861; *Low's Sarawak*, p. 145.

COCOANUT PEARLS, said to be concretions existing free in the interior of the cocoanut in the East Indies, particularly at Singapore, where the rajas esteem them as precious stones. Mr. J. Bacon published a notice of them in the *Proceedings of the Boston Society of Natural History*, U.S. It is said that they occur sometimes as large as a cherry; but Mr. Bacon's are about 2-5ths of an inch in diameter. These vegetable pearls are smooth and white, like animal ones, but are harder, and not quite so brilliant. Like ordinary pearls, also, they are composed of carbonate of lime, but have only a very small proportion of organic matter. The former contain considerable quantities of an albuminous animal substance. Examined microscopically, the cocoanut pearls are found to be composed of numerous regular concentric layers, which adhere to each other very energetically. Their origin is at present uncertain. In the analysis of the cocoanut milk, a little phosphate and malate of lime is found, but no carbonate, which hitherto has not been found in any part of the nut.

COCOANUT TODDY. Cocoanut trees of vigorous growth send forth nine, ten, and even twelve clusters of buds every year. But those on which little care has been bestowed, and which are consequently feeble, produce only four or five of these spathes, called in Tamil 'palai.' The 'Sanar,' or toddy-drawer, when accoutred, has first in importance among his appointments, the arivalpatty (lit. knife-box), made from the sheath of the spathe, and bound round tight with two binders of rattan. A strongly plaited rope is permanently fastened to one side of the arivalpatty. The short arm of it has a much smaller loop;

when fastened round the waist, the longer arm is passed inside the small loop of the short arm. Through the loop of the long arm, the toddy-drawer passes the end of his waist-cloth, and ties it into a knot. Next in importance is the eropetty, into which the toddy-drawer empties the toddy collected in the pot or chatty up the tree. It is made of almyra fibre closely plaited, and, when moistened, is water-tight. Two wooden collar shavings, about two inches broad, encircle the mouth of the eropetty, one inside and one outside; between them the plaited wicker-work is run up and made fast. To keep the eropetty in its bulged, bottle-like form, a piece of rattan about half-way down is woven in, and encircles the vessel like the hoop of a barrel. The eropetty hangs suspended over the hoop of a barrel. It takes nearly a year's practice to make a man master of the curious mode of climbing, after which the loftiest trees are ascended in a minute with surprising ease. After a hard morning's work, the left arm always aches more than the other limb, showing that there is more strain on it than anywhere else. When an accident befalls a toddy-drawer, it is usually occasioned by his left hand missing its hold on the tree and slipping aside, which brings him to the ground instantly, often with fracture or injury of that limb.

When the spathe is a month or a month and a half old, the toddy-drawer begins his labours by binding the sheath to prevent its expansion, after which he cuts about an inch off the end, then gently hammers the flowers which are thereby exposed. Finally, he binds up the end with a broad strip of fibre, and descends. This process he continues morning and evening for fifteen days, a thin slice being cut away on each occasion. During this time, also, by shaving away a little of the under part of the sheath, he trains it to bend over. It is probable that the exact term of days during which the spathe undergoes this initiatory preparation varies in different places, and depends upon surrounding circumstances. Mr. Berthold Seeman, in his *Popular History of Palms*, mentions five or six days as sufficient. Near Madras, a toddy-drawer gave fifteen days as the usual time; but the time when a spathe is ready to yield toddy will be easily known by the chattering of birds, the crowding of insects, the dropping of the juice, and other unmistakable signs. When ready, the end of the spathe is fixed into a kudave or small pot, and a small slip of leaf is pricked into the flowers to catch the oozing liquor, and to convey the drops, without wasting, clear into the vessel. When the spathe begins to yield toddy, he ceases to hammer it. It will give toddy for about a month, during which time, every morning and evening, he mounts the tree, empties the toddy into his eropetty, binds the spathe an inch lower down, smears the end of it with his palai mattai, and shaves a little away, then pricks in the slip of leaf, and ties the kudave on again. The man who ascends the tree is generally a paid servant, receiving about Rs. 7 a month. He will attend to thirty or forty trees. Forty trees yield about twelve measures (Madras) of juice, seven in the morning and five in the evening. During the heat of the day the spathe does not yield so freely as in the night. Twelve measures for forty trees is at the rate of a little more than one-fourth of a measure to each tree.

A first-rate tree in a good soil, and carefully tended, will produce one measure during the night, and three-fourths or one-half of that quantity during the day; but, taking one tree with another, a quarter of a measure is a fair average. Some trees, under favourable circumstances, continue yielding at this rate throughout the year, others only for six months. It is not prudent, however, to draw all you can from them, as they will be exhausted, and become barren. Every morning and evening, when the Sanar goes to draw the toddy, a servant or some one connected with the owner or contractor for the trees, usually accompanies him with a chatty, into which is emptied the toddy from the eropetty. When all the trees have been visited, and the toddy measured into the chatty or cullu-pani, it is carried away to the bazar rented by the contractor from Government at a fixed price. In Madras there are about 58 first-class toddy shops, to each of which 330 cocoanut trees are allotted, the contractor paying daily Rs. 2-12-10 to Government for each such shop; also 63 second-class toddy shops, to each of which 247 cocoanut trees are allotted, each shop yielding daily Rs. 2-2-10 to Government; and also 205 third-class shops. There is nothing very peculiar about the habit, custom, or dress of the Sanars to separate them from other Hindu castes, apart from their occupation. Around Madras the Sanars are divided into two classes, the higher and the lower; the latter are called Pully Sanar, and permit their widows to marry.—*Dr. Cleghorn, in No. 23, Edinburgh New Philosophical Journal, 1861.*

COCOANUT TREE BEETLE, *Butocera rubus*.

COCO-MEAL is prepared in the West Indies from the starchy tubers of *Colocasia esculenta*, *Scht.* The labouring population of the West Indies largely depend for a supply of food on this root. Long droughts may disappoint the hope of the yam crop, storms and blight may destroy the plantain walks, but neither dry nor wet weather materially injures the coco. Previous to their emancipation, whole families of Negroes lived upon the produce of one provision ground, and the coco formed the main article of their support. Where the soil is congenial to the white and black Bourbon coco, the labour of one industrious person once a fortnight will raise a supply sufficient for the consumption of a family of six or seven persons. The coco begins to bear after the first year, and with common care and cultivation the same plant ought to give annually two or three returns for several years.—*Simmonds.*

COCOON. *Indrag sutra*, MALAY. The covering spun by the silkworm, and in which it wraps itself.

COCOS. There are three groups of islands known by this name. The Cocos Islands, in lat. 14° 10' N., and long. 93° 10' E., 45 miles distant from the north-east point of the great Andaman, are two little isles. The larger of them is six miles long and two broad, the smaller two miles and a half long and nearly a mile broad. They are sheltered by the Andamans from the heavy south-west swell of the Bay of Bengal. They are unhealthy.

The Cocos, near Hog Island, in lat. 3° 6' N., and long. 95° 30' E., on the west coast of Sumatra, are two small islands covered with trees.

The Cocos or Keeling Islands, south of Java,

lie in two distinct divisions north and south of each other. The channel between the two is 15 miles broad; the northern division consists of one island only, in lat. 11° 49' S., and long. 96° 51' E., but the islets in the southern one are numerous.—*Rec. Gov. of India*, xxv. p. 64; *Horsb.*

COCOS NUCIFERA. *L. Cocoanut tree.*

Palma Indica major.	Calappas, <i>Rumph.</i>
Ba, ACHIN.	Narikela, SANSE.
Narjil, ARAB.	Tombili, SINGH.
Narikal, BENG.	Pol nawasi, "
Theinghana, CAN.	Tennam maram, TAM.
Ye-taze, CHIN.	Kobbari chettu, TEL.
Narel ka jhar, HIND.	Erra bondala, "
Kalapa; Nur, MALAY.	Tenkaia chettu, "
Tenga, MALEAL.	Gujju narekadam, "

The Nut.

Jouz-i-hindi, ARAB, PERS.	Cocchi, IT.
Narjil, Nargil, "	Kalambir, MALAY.
Kokosnuten, DUT.	Rukos, RUS.
Cocos, FR., SP.	Tengai, TAM.
Kokosnusse, GER.	

The Palma Wine or Toddy.

Nargilli, ARAB.	Tennam kallu, TAM.
Narilli, DUKH.	Tenkaia " TEL.

Its Cabbage.

Narel ka krute, HIND.	Tenkaia gurtu, TEL.
Tennam kurtu, TAM.	

Its Water or Albumen.

Yel nir ka pani, DUKH.	Yella-nir, Yella-niru, TAM, TEL.
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Its Fibre.

Coir, HIND.	Tennam nar, Tenkaia nar, TAM, TEL.
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The cocoanut palm does not seem to have been known to the ancients, though it is said to be indigenous in the East, from which they received ambassadors; and is said by the Hindus to have been brought by Viswamitra from Ceylon to India. The first allusion to it in Ceylon is of A.D. 1153, in the time of king Prakrama I. It now grows in great abundance in the Maldives and Laccadive islands, on the Malabar coast, in Ceylon, on the eastern side of the Bay of Bengal, though scarce in Arakan, whence it ascends both the Brahmaputra and Ganges rivers to a considerable distance. It grows in the Nicobars, in China to lat. 20° N., in most parts of the Eastern Archipelago, from the Sunda to the Molucca Islands, and in those of the Pacific Ocean, and is now cultivated in various tropical parts of the New World. It grows to a height of 1000 feet above the sea, though flourishing in greatest luxuriance in the vicinity of the ocean. It rises sixty to a hundred feet high; its cylindrical trunk, three feet in diameter, is crowned with numerous waving, feathery leaves, forming an elegant object of intertropical scenery. It is self-propagating. Its keel-shaped nut, protected from the salt water by its tough and thick though light covering, sails on the ocean to barren spots, where it germinates, and causes even the smallest islets to become covered with clumps of the cocoanut palm. They are surmounted by numerous wavy leaves, called fronds by botanists, and their footstalks are often called branches by travellers. The leaves are gigantic in size, being about 20 feet in length, with a strong tough stalk, which forms the midrib, and has a number of narrow and long leaflets ranged along the two sides.

It is a tree of great value to the people, who utilize it in upwards of a hundred ways. The

wood is applied to various purposes, such as rafters, fences, shears, laths, shingles, chairs, and ladies' work-boxes, etc.; but during the period of its most abundant bearing (considered to be between ten and thirty-five years' growth), the heart-wood is of so soft and spongy a nature, that it is then merely used for fences, water-pipes, etc. Its wood is also used for reepers, for which purpose it is, however, inferior to the palmyra, though, in Ceylon and on the western coast, hard and durable rafters are procurable. The Cochin planks are prettily striped, and of remarkable size. The wood is strong and durable; a cubic foot weighs 70 lbs., and it is esteemed to last for 20 to 50 years. It is used for ridge-poles, for temporary roofs, aqueducts, etc.; for small boats; for the beams, posts, and rafters of houses; for spear handles, paling, and walking-sticks; for fancy boxes and furniture; for boats' frames, bridges, ramparts, water butts, conduits, gutters, and drums. It forms one of the porcupine woods of commerce, and is used for fancy articles. A farinaceous substance is contained in the stem, which forms a good substitute for sago. Each tree produces annually from 50 to 60 coconuts, but up to 300 nuts have been obtained from a single tree, but some trees never fruit at all. From the appearance of the flower until the fruit drop, a period of fourteen months elapses. These are enclosed in a thick fibrous husk, from which the coir of commerce is obtained by maceration and beating. The husk is employed as a scrubbing brush and polishing brush; it is converted into cordage of various kinds, employed for the rigging of ships, fishing-nets, matting, and brushes; and in India, in its loose state, it is the usual material with which mattresses, pillows, and sofas are stuffed. Within the fibrous husk is the shell, which is very brittle, though its structure is somewhat fibrous. Cut in various ways, it is formed into cups and drinking vessels, into pitchers, funnels, and lamps. It is susceptible of a high polish, and admits of being turned in an agreeable manner. Those shells which are tolerably circular are used for the bodies of cups and vases, the feet and covers being made of wood and ivory. Common buttons are also made of the coconut shell, and are considered better than those of horn, as they do not, like that material, absorb the moisture, which causes horn buttons to swell and burst. The shell forms a valuable charcoal.

In its young and green state, the coconut contains a clear albuminous fluid, with a sweetish taste and a slight degree of astringency, which makes it a very agreeable, refreshing beverage; and it is also used by house plasterers as an ingredient in their whitewashes made of pure lime. But as the nut advances to its full maturity, the fluid disappears, and the hollow is filled by the almond-like dried albumen, which is the germinating organ. This pulp or kernel, when young, can be easily removed by a spoon. When cut in pieces and dried in the sun, it is called copra, which forms an extensive article of commerce throughout the south and east of Asia. It is used grated in curries, or its milk is expressed from it; and from copra a valuable oil is expressed, which is employed in anointing the body, is used in lamps, is largely converted into the stearine candles of England, and forms an

invaluable substitute for cod-liver oil. The refuse oilcake, 'poonac,' forms an excellent manure. The white and solid albumen is often cut into ornaments of flowers and fruits, meant to represent the garlands given to visitors of distinction. They are worn by Tanjore ladies at particular festivals.

The very young or heart-leaves of this palm are called the cabbage, and form an excellent vegetable, either cooked or dressed in stews, hashes, or ragouts. In the Laccadive Islands, the heart-leaves of the tree, just before they unfold, are cut out and plaited into mats of fine quality, which are there used as sails for the smaller boats, and are much esteemed when exported. In India, the leaves, dried, and called by Europeans cadjans, are plaited and used as thatch, and for the outer and inner linings of walls of houses. The leaves are also made into mats, baskets, both fancy and plain; into fans, combs, brooms, screens, buckets, and lanterns; into articles of dress; and into leaf-books, torches, and fuel. The foot-stalks of the fronds are used for fences, yokes, shoulder-poles, and fishing-rods. The midribs of the leaves or fronds are fibrous, but brittle, and are used as brooms. The roots of the tree are chewed as a substitute for betel-nut.

One of the beverages known to Europeans as palm-wine or toddy, is obtained from the flower spathes. Before the flowers have expanded, the spathes—and these are themselves astringent and used medicinally—are tied with the young leaves, and then cut transversely from the top downwards, and beaten daily with the handle of the knife or a piece of hard wood, and the sap, after a few days, exudes into a calabash or earthen pot. In the early morning this is a pleasant, refreshing drink; but it ferments towards night, and becomes an intoxicating fluid, which is largely drunk, and is used as a ferment. It is to a great extent artificially brought to the vinous and acetous fermentations, and, in the former state, an alcoholic spirit is distilled from it, which forms one of the arracks of commerce. One hundred gallons of toddy produce, it is said, by distillation, twenty-five gallons of arrack: eight gallons of sweet toddy, boiled over a slow fire, yield two gallons of a luscious syrup, from which, by further boiling, a coarse brown sugar is produced, known in commerce as jagari. The net-like substance Peynadi, TAM., Jalla mitta, HIND., at the base of the petiole, when very young, is delicate, beautifully white, and transparent; but when it attains maturity, becomes coarse and tough, and changes to a brown colour. Portions of these are everywhere used as strainers and sieves, for straining fluids, sifting arrowroot, etc.; and the Tahitian fishermen convert it into a garment when fishing.

The flowers contain a powerfully astringent property, which is used medicinally; and it is from the flower and spathes, before the flower has expanded, that the toddy or palm-wine of this tree is obtained. The Tahitians extract a gummy substance, called Pia-pia, from the trunk of the tree.

George Herbert, writing of the coconut, has said,—

'The Indian's nut alone
Is clothing, meat and trencher, drink and can,
Boat, cable, sail and needle, all in one.'

In Malabar and Ceylon, every available spot

within the influence of the sea-breeze is being devoted to the growth of the cocoanut. Along the western coast of the Madras provinces, the wavy downs near the sea borders, which have hitherto produced only a stunted and worthless crop of grass, are being everywhere levelled, broken up, and manured, so as to form the beds of future plantations. Cocoanut trees have great enemies in the shape of two beetles. One of these is a large Curculio (*Rhynchophorus* Sach) called the red beetle, nearly as big as the stag-beetle of Britain; the other is the *Oryctes rhinoceros*, so called from its projecting horn. The red beetle is so called from the red mark on the upper part of its breast. Its attacks are said to be on the nut, but those of the rhinoceros beetle are on the terminal bud of the palm stem. When so injured, the bud dies, and the crown of the leaves falling off, leave the cocoanut tree a mere bare stem. The same result occurs to other palms, the palmyra, the beetle, in which the top bud, or cabbage, as it is called, is destroyed.—*Collingwood*; *Simmonds*; *Boyle's Fib. Pl.*; *Madras Exh. Jury Reports*; *Seeman on Palms*; *Ainslie*; *Madras Lit. Soc. Journ.*; *J. Ind. Arch.*; *Eng. Cyc.*; *Elliot's Flora Antirica*; *Cal. Review*; *Muholm's Tr.* ii. p. 176.

COCOTIER DE MALDIVES. Fr. Sea coconut; *Lodoicea Seychellarum*.

COCOYA. MALAY. Sleeping mats made from the leaf of the *Pandanus odoratissimus*.

COCUM OIL or Butter is obtained from the seeds of *Garcinia purpurea*, and used in various parts of India to adulterate ghi or butter. It is said to be exported to England for the purpose of mixing with bear's grease in the manufacture of pomatum. It is a white or pale greenish-yellow solid oil, brittle, or rather friable, having a faint but not unpleasant smell, melting at about 95 degrees, and when cooled, after fusion, remaining liquid to 75 degrees.—*Simmonds*.

COD.

Kabliaw; Bakelau, .	DAN.	Baccala; Baocalare, .	IT.
Mkrei torak, .	"	Gadus,	LAT.
Kabeljauw; Bankaelja,	"	Bacalhao,	PORT.
	DUT.	Bacalao,	SP.
Morue; Cabillaud, .	FR.	Bakelau; Kabeljo, .	SW.
Kabljau; Bakalan, .	GER.		

In China the consumption of salted provisions is very general. Fish, cured with salt and dried in the sun, is one of their most generally used articles of food; and on salted cod being introduced for two or three years in English ships, the somewhat decayed condition in which it reached China was anything but a drawback. But this cargo, besides its disagreeable nature and the injurious effect on some delicate articles of shipment during the voyage, bred a peculiar insect, which, from the readiness with which it bored into the planks and timbers of a ship, was considered as dangerous, and accordingly the import was greatly discontinued. Cod sounds, brought into Britain in great quantities from Newfoundland, are the salted air-bladders of these fishes. They are also largely imported into England from the east coast of Scotland. Cod-liver oil is largely in use throughout the world in cases of threatened phthisis.—*M'Culloch's Com. Dict.* p. 302; *Morrison, Compendious Summary.*

CODILLA or Tow, the short fibres of hemp or flax, separated or picked out in cleaning.

CODO. HIND. *Paspalum frumentaceum*, Kern.

This is sown early during the rainy season. Its small grain frequently has inebriating properties, when made into bread. Such codo is known by the name of mutouna, from Mutt, drunk, intoxicated. In appearance it resembles ordinary codo; it is sown as ordinary codo, and comes up as mutouna, but only in those fields on which codo has been previously grown; and even in such case, only, perhaps, in one instance out of ten.* These curious properties of codo have invested it with a degree of mystery in the eyes of the natives of India, and the Kakun Rajputs of Ghazipur are said to worship it as a divinity. They never cultivate or eat codo,

' Nefas violare et frangere morsu ;'

and the reason assigned is that, while under the influence of mutouna, they were set upon by some of the neighbouring tribes, and thus lost the greater part of their once extensive possessions. Kisaree (*Lathyrus sativus*) is another grain which is found to have injurious properties.—*Elliot*.

CECILIIDÆ, a family of curious reptiles of the order Batrachia apoda. The family contains two genera, *Cæcilia oxyura*, *D. et B.*, which is found in Malabar, and the genus *Epicrion*, of which *E. glutinosum*, *Linn.*, is found in Ceylon, and *E. monochroum*, *Bleeker*, in Pegu. *Linnaeus* gave to the Ceylon species the name *Cæcilia glutinosa*. This is an inch in diameter, and nearly two feet in length. Its eyes are so small and imbedded as to be undistinguishable to ordinary observers, who believe the reptile to be blind. Like snails, eels, and some salamanders, it secretes a viscous fluid from minute pores in its skin. The skin is furrowed into 350 circular folds, in which are imbedded minute scales. The head is tolerably distinct, with a double row of fine curved teeth for seizing the insects and worms on which it is supposed to live.—*Sir J. E. Tennant*, p. 318.

COEL. HIND. A bird of the family Cuculidæ. It is the *Eudynamys orientalis*, and inhabits Ceylon, India, Malay countries, and China, and is called Coel, HIND., Kokil, BENG., Chule, MALAY, and Cowdecha, SINGH., all of the names being obtained from its ordinary call, which closely resembles the word Koil. Like the cuckoo of Europe, this is in India, the harbinger of spring; and its call, though shrill and disagreeable, is associated with all the joys and labours of husbandry of that season, and is quoted in the rhymes and proverbs of the people. Thus Coel boleë, Sebundee dolee, the cry of the coel is the grief of the sebundy soldier; meaning that the disbanding of the armed men gathered together for collection of revenue depends on the coel's note,—Sebundee being a corruption of Sipah Hindie, in distinction to Moghul or foreign troops, who were always kept up. The coel, indeed, occupies much the same place in India that the cuckoo does in Europe. The European names, even, are all derived from the Sanskrit name Cuculus. Pliny says that the vine-dressers deferred cutting their vines till the cuckoo began to sing. There is the cuckoo-ale of England, which the labourers leave their work to partake of, when the first cuckoo's note is heard. There is also the vulgar superstition in England, that it is unlucky to have no money in your pocket when the first cuckoo of the season is heard; and the amorous Hobnelia tells us that in love omens its note is equally efficacious.—*Elliot*.

COEL, the ancient name of Alighur, where M. Perron built a fortress.

COELAGOERYP, a race in Cochin who make bows, arrows, shields, and other weapons. The Canniargoeryp race teach fencing and the use of weapons. The Coelady are trumpeters.

CŒLOGYNE, a genus of plants belonging to the natural order Orchidaceæ. The most gaudy of the plants of Borneo are perhaps the various species of Cœlogyne, called collectively by the natives the bu-nga ka-sih-an, or the flowers of mercy; their white and orange-coloured flowers are exceedingly delicate and beautiful, and they are all highly fragrant. About 20 species occur at the foot of the Himalaya, Nepal, the Khassya Hills, and China, namely, *angustifolia*, *barbata*, *cristata*, *decora*, *elata*, *fimbriata*, *flavida*, *Gardneriana*, *interrupta*, *longicaulis*, *maculata*, *media*, *nitida*, *ocellata*, *ovalis*, *præcox*, *procera*, *prolifera*, *rigida*, *undulata*, *Wallichiana*. Borneo has *C. Lowii*, *Paxton*, *pandurata*, *Lindley*, the last with large green and black flowers.

CŒLOPS, a genus of the mammalia, of the sub-family Rhinolophinæ, of the sub-order Cheiroptera or bats.

COEPANG, a Dutch settlement in the S.W. part of the island of Timor.

COFFEA, a genus of plants belonging to the natural order Cinchonaceæ. There are several species, viz. *C. Arabica* of Arabia, from which it has been introduced into many countries; *C. Bengalensis*, the Bun-kahwa or wild coffee, which grows in Assam, Nepal, and the Khassya Hills; *C. elliptica*, *Thwaites*, a small tree of Ceylon, growing to 10 or 12 feet high in the Hinidoon Corle; *C. Guianensis*, *Aubl.*, of Guiana and Trinidad; *C. Mauritiana*, *Lam.*, of Bourbon; *C. Mexicana*, *D.C.*, and *C. obovata* of Mexico; *C. Liberica*, *Bull.*, of Liberia; also *C. tetrandra* of the Khassya mountains; and Wight describes *C. alpestris*, *Gru-melioides*, and *Wightiana*. The *Coffea Arabica* trees are now grown in Abyssinia, and in tropical Africa generally; in Arabia, on the slopes of the Neilgherry Hills, in the Peninsula of India, at Lohardugga in Bengal; in Ceylon, Siam, Burma, Sumatra, Java, Manilla; in Queensland, in the Mauritius; in the West India Islands, Central America, Brazil, and Peru. The seeds known as the bean, from the Arabic 'boon,' are the economic product of this tree, and Great Britain obtains its supply of them from many of the above-mentioned countries,—from Ceylon, British India, Brazil, and Central America. In 1880 its imports reached 1,555,939 cwt., valued £7,062,016; and 290,802 cwt. were retained for home consumption. In British India, Mysore, and Cochin, there were in 1880, 47,978 coffee plantations, with 162,373 acres under mature plants. The approximate yield is 33,100,778 lbs.; and the yield per acre of mature plants ranged up to 447 lbs., being smallest in Mysore and highest in the Neilgherries. Seven cwt. per acre have been claimed for the yield occasionally on some of the Coorg estates, but reliable information was furnished in the fifth issue of the Statistical Tables for British India. In 1879 there were 17,351 estates in British districts, with 62,729 acres under mature plants, and the average yield per acre of mature plants was 325 lbs., the greatest crop being on the Neilgherries, where 462 lbs. or 4 cwt. 14 lbs. was the average. The crops

per acre in Mysore were only 14, 22, and 30 lbs. respectively in the Kolar, Hassan, and Shimogah districts. The plantations in these three districts numbered 10,965, and 44,116 acres were under mature plants. The Kadur district of Mysore had 13,802 plantations, but the other data are not given. Coorg had 4248 plantations, with 39,150 acres of mature plants, and its yield averaged 328 lbs. In the Feudatory States of Cochin and Travancore there were 140 plantations, with 16,340 acres of mature plants, yielding 246 lbs. per acre.

COFFEA MAURITIANA. Lam.

C. Arabica, *Æ.*, *Willd.* | *C. sylvestris*, *Willd.*
C. myrtifolia, *Roeb.* | *Café Marron*, . . . Fr.

A plant of the Mauritius, Bourbon.—Voigt.

COFFEE BERRY.

Boon, . . . AR., BOMBAY. | Bun, Kahwa, Kapi, VERN.
Kia-fi-cha, . . . CHIN. | Kaf, Kof, . . . "
Eleanc, . . . EGYPT.

The coffee tree is supposed to be indigenous to the mountain regions of Enarea and Cuffa, to the south of Abyssinia, whence about the 16th century it was introduced into Arabia, in the 17th century into Ceylon and Mysore, into Mauritius and Bourbon in 1718, and Batavia in 1723, and subsequently into the West Indies. Abd ul Kadar Mahomed ul Azari ul Jeziri ul Hanbali, who wrote in Egypt about A.D. 1587, relates that in the middle of the 15th century Jamal ud Din Abu Abdulla Mahomed bin Saeed ud Dubani was Kadi of Aden, and, having occasion to visit Abyssinia, he found his countrymen there drinking coffee, and on his return to Aden introduced it, whence it passed into Arabia generally. Shaikh Ali Shaduli ibn Omar settled near the sea about A.D. 1630, on the plain now occupied by the town of Mocha, and his reputation drew people around him, till a village was formed. He greatly recommended the use of coffee, and he has ever been regarded as the patron saint of Mocha, the people having, on his demise, erected over him an elegant tomb. Tavernier, in the 'Collection of Several Relations,' etc., published in London in 1680, has stated (page 64) that 'coffee grows neither in Persia nor in India, where it is in no request; but the Hollanders drive a great trade in it, transporting it from Ormus into Persia, as far as Great Tartary, from Balsara into Chaldaea, Arabia, Mesopotamia, and the other provinces of Turkey. It was first found out by a hermite, whose name was Sheck Siudeli, about twenty years ago, before which time it was never heard of in any author either ancient or modern.'

Coffee has been grown in part of Mysore almost from the same time that the Arabs have known it. It was brought there from Arabia by a Mahomedan pilgrim, named Baba Booden, who formed a college on a spur of the hills now called after him, and from there the coffee plants spread. He is said to have brought with him only seven coffee beans, which he planted, and it is now one of the most valuable of the plants which have been distributed by man. Its large, pure white, sweet-scented flowers appear in March, April, and May, and it fruits in November, December, and January. Its fruit contains an active principle called caffeine, which has been found to be identical with theine; and a decoction of the roasted berries, or an infusion of the berries, is a well-known article of diet, and with tea, cocoa.

COFFEE PLANTING.

matao, Paraguay tea, guarana, and kola nuts, constitute the beverages of the European, American, Asiatic, and African peoples. Each of these plants contains the alkaloid theine. Different in botanical characters, varied in genera, yet not very unlike in flavour, they all contain this valuable active principle. The theine in dried kola nuts is about 2 per cent., coffee has 0.5 to 2.0 per cent., and tea from 0.5 to 3.5 parts in 100. The coffee berry consists almost wholly of albumen, which surrounds the small embryo of the seed, and in infusion or decoction is a stimulant. In Arabia, the decoction and infusion is often prepared from the husk and the bean, and often from the husk alone. Lane says Kahwa is an old Arabic term for wine. Dr. Shortt, in his Handbook to Coffee Planting, described the process of wine and spirit making with the fresh coffee pulp, but also from the dried husks of the fruit.

Coffea Liberica, Bull., the Liberian coffee plant, is of almost arboreal growth. It has a larger leaf, and its berries also are larger, and of superior flavour to those of *C. Arabica*, and it is more productive. It was at one time hoped that this plant would be less affected by the Hemileia mould, known as the leaf disease, as it is said to have an immunity from the cecostoma fly.

The import of coffee into Great Britain from Ceylon and other British possessions, from Brazil, Central America, and other countries, was as under:—

Years.	Cwt.	Value.	Years.	Cwt.	Value.
1877,	1,609,717	£7,788,014	1879,	1,617,389	£7,247,568
1878,	1,273,410	6,012,977	1880,	1,555,939	7,062,016

Liberian coffee grows at elevations unsuitable to the Arabian species. At the end of 1877 there were in Ceylon about 500 acres planted with Liberian coffee. Estimates of the area under cultivation at the end of 1880 varied from 4000 to even 10,000 acres. Though not enjoying complete immunity from the attacks of leaf disease, the growth and productiveness of the trees have not so far been affected by it. London dealers are said not to appreciate its bean very highly, but it has been favourably received in America.—*M'Culloch; Waring; Royle; Birdwood; Voigt; Journ. Ind. Arch.; Statistical Tables; F. von Mueller.*

COFFEE PLANTING, as a branch of agricultural industry, although only introduced into India in comparatively recent times, has attracted many persons. The outlay has been great, but both in Ceylon and Southern India the losses have been considerable, often ruinous. In Netherlands India, coffee planting has been a Government monopoly, and there has been a large exportation of coffee from Java; but the most recent information is to the effect that the monopoly is not, or was but little, remunerative. In British India coffee is grown along the summits and slopes of the Western Ghats, from the northern limits of Mysore south to Cape Comorin; in Coorg, Travancore, in the Wynad, on the slopes of the Neigherry Hills, and also on the Shevaroy Hills and Pulney Hills. Major Bevan introduced coffee into the Wynad about the year 1822, as a curiosity. Mr. Cannon, somewhat later, formed a plantation in Mysore; Mr. Glasson, in 1840, formed a plantation at Manautoddy; and in 1842 it was growing well at Belgaum. The extension has since been great; and in 1880, in the

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Cochin, Travancore, Mysore, and Madras districts, and at Lohardugga in Bengal, 412,947 acres had been taken up for coffee, of which 162,847 acres had mature plants. The yield per acre on exceptional estates, in exceptional seasons, is said to be greater. The cultivation in British India has increased in extent year by year, and the exports, chiefly to Europe, have been as under:—

Years.	Cwt.	Value.	Years.	Cwt.	Value.
1850-51,	64,797	£100,509	1865-66,	309,823	£785,103
1851-52,	77,772	84,306	1866-67,	...	...
1852-53,	70,227	97,490	1867-68,	296,332	761,342
1853-54,	...	109,761	1868-69,	433,288	1,121,032
1854-55,	66,072	82,794	1869-70,	325,831	870,189
1855-56,	82,197	120,201	1870-71,	301,935	809,701
1856-57,	...	132,819	1871-72,	507,296	1,390,410
1857-58,	54,677	99,727	1872-73,	375,887	1,146,219
1858-59,	104,421	135,086	1873-74,	367,132	1,499,496
1859-60,	128,088	188,532	1874-75,	312,874	1,307,918
1860-61,	170,706	337,433	1875-76,	373,499	1,633,395
1861-62,	192,015	467,991	1876-77,	304,158	1,353,588
1862-63,	187,908	513,257	1877-78,	298,587	1,344,638
1863-64,	238,866	657,672	1878-79,	342,268	1,548,481
1864-65,	289,178	801,908	1879-80,	361,037	1,633,032

Ceylon.—The coffee tree was introduced into Ceylon by the Arabs before the arrival of the Portuguese, but the Singhalese only employed its tender leaves for their curries, and its delicate jasmine-like flowers for ornamenting their temples and shrines. The Dutch carried the coffee tree to Batavia in 1690, and about the same time they began its cultivation in Ceylon, but again ceased in 1739. Its culture, however, continued to be prosecuted by the people; and, after the British occupation, the Mahomedans collected it in the villages, and brought it to Galle and Colombo, to be bartered for cutlery, cotton, and trinkets. It was extensively diffused over the country by the agency of birds and jackals. From 1821 the quantity of coffee shipped to Britain yearly increased,—native grown, badly prepared berry, and ranking below almost every other kind of coffee. In 1830 the first attempt at careful coffee cultivation and curing was made on a considerable scale by the governor of the island, Sir Edward Barnes, and the success induced others to apply for waste forest land. During 1836 and 1837 upwards of 7000 acres of Crown lands were purchased, and partly cleared and planted; and in 1836 the crop was 60,330 cwt. It had become widely extended through the Kandyan provinces. On the Himaagar mountains, in 1840, a small plantation was formed. In 1846 there were fifty estates there, averaging each 200 acres of planted land, and yielding an average crop of 80,000 cwt. of coffee. On the 31st December 1847, there were 50,070½ acres cultivated. The gross outlay of this is said to have amounted to £5,000,000 sterling. In the seventeen years 1855 to 1872, the extent of coffee land cultivated in Ceylon increased 175 per cent., the number of plantations rising from 404 to 1087, the crop from 374,000 to 760,000 cwt. The out-turn of produce increased 100 per cent., but the average yield per acre decreased from 5.5 cwt. to 4.88 cwt. (Standard, Nov. 17, 1879). In 1875 coffee was under cultivation in 37 districts of Ceylon, containing in all 1351 properties, of a total 481,539 acres, of which 249,604 acres were cultivated. From 1856 to 1875 the crops per acre have ranged from 2.75 cwt. in 1874, to 5.07 cwt. in 1868, the general average being rather under 4.25 per acre.

Coffee interests in Ceylon were injured by the over-eagerness of the early planters to obtain coffee property, leading them to pay unremunerative prices. The coffee crop of 1870-71 was generally a bumper. The season of 1871-72 was one of short crops, caused by irregular blossoming showers, and by the leaf disease, which then made its first appearance. From 1871 to 1878, on the average, 707,590 cwt. of coffee were exported from Ceylon, and the average production per acre was 3.79 cwt. In 1879 the export was 774,774 cwt., and the out-turn per acre cultivated was 3.60. In the three years 1878 to 1880, the average export was 658,575 cwt., and the average yield per acre was 3.01 cwt. Since these unremunerative results followed, the planters have been directing their attention to cacao, cinchona, and tea.

In *Arabia Felix* the culture is principally carried on in the kingdom of Yemen, towards the cantons of Aden and Mocha. Although these countries are very hot in the plains, they possess mountains where the air is mild, and the coffee is generally grown half-way up on their slopes. When cultivated on the lower grounds, it is always surrounded by large trees, which shelter it from the torrid sun, and prevent its fruit from withering before its maturity. The harvest is gathered at three periods; the most considerable occurs in May, when the reapers begin by spreading cloths under the trees, then shaking the branches strongly, so as to make the fruit drop, which they collect and expose upon mats to dry. They then pass over the dried berries a heavy roller, to break the envelopes, which are afterwards winnowed away with a fan. The interior bean is again dried before being laid up in store. The principal coffee districts are Henjersia, Tarzia, Oudein, Aneizah, Bazil, and Weesaf. The nearest coffee plantations are three and a half days' journey (about 80 miles) from Aden. Coffee is brought into the Sana market in December and January from the surrounding districts. The varieties are Sherzee best, Ouceaine, Muttanee, Sharrazee, Hubbal from Aniss, Sherissee from Aniss. The nearest place to Sana where the coffee tree grows is at Arfish, half a day distant. The coffee plant in Arabia is mostly grown near the sides of mountains, valleys, and other sheltered situations, the soil on which has been washed down from the surrounding heights, and carefully protected by means of stone walls, so as to present to the traveller the appearance of terraces. The plant requires a moist soil, though much rain does not appear necessary. It is always found in greater luxuriance at places where there is no spring; yet an abundant supply of water to the root of the plant seems necessary for the full growth and perfection of its bean. Mr. Palgrave says the best coffee is that of Yemen, exported from Mocha, but Arabia, Syria, and Yemen consume two-thirds of it, and the other third finds its way to Europe, to the west of Constantinople, and is used by Turks and Armenians. The rounded, half-transparent, greenish-brown berries are deemed the best. It is also exported by the Red Sea into the Hejaz and Kasim in Shimer. It was stated by Niebuhr to have been brought by the Arabs from Abyssinia to Yemen, from a country similar to their own plains and mountains; that people had for ages cultivated it in the hilly range (Jabal) in

a healthy temperate climate, watered by frequent rains, and abounding in wells and water tanks.

In *Ceylon*, the coffee plant will grow and reproduce itself on a level with the sea; and at 2000 feet above it, the trees, whilst young, will have the most luxuriant appearance, come soonest into bearing, and yield the greatest measurement quantity per acre, but the bean is light, and of an inferior quality. The best Ceylon properties are situated on the mountains at from 3000 to 4500 feet above the sea, where rain is frequent, about 100 inches annually, and the temperature moderate, the maximum 80° and minimum 15°. The aromatic properties (and consequently fine flavour) of the coffee plant are best developed in Ceylon between 3000 and 5000 feet above the ocean. The higher it is cultivated, with care, below frost, the better has been the quality of the produce, although the yield is less. The appearance of high mountain beans is long, blue, the longitudinal seam curved, with its sides close and compact; its specific gravity is greater, and its aromatic principle more abundant and finer, than that produced on low lands, which is attributed to its being grown slowly in a cold climate. The best plantations are situated in the Kandyan province, where the thermometer ranges at noon about 76°, and in the morning not higher than 60°. The coffee berry in those elevated regions has therefore to be conveyed to Colombo, where a constant high temperature enables the merchant to complete the drying process, which the planter had but commenced. Coffee planting failed over a considerable portion of the southern province of the island. The temperature was found to be too equable, not descending sufficiently low at any time to invigorate the plant, which, though growing luxuriantly at first, soon became weak and delicate. The chief crop ripens in October and November, and a small second gathering is looked for in May. The following have been the average quantities and values of quinquennial exports from Ceylon:—

Years.	Cwt.	Value.	Years.	Cwt.	Value.
1837-41,	54,872	£151,320	1857-61,	600,942	£1,506,406
1842-46,	140,220	284,473	1862-66,	785,998	2,009,342
1847-51,	315,049	537,348	1867-71,	973,975	2,514,389
1852-56,	411,264	861,269	1872-76,	799,124	3,444,233

In Ceylon, suitable coffee land has been costing £8 to £20 the acre; and £25 to £30 the acre was the estimate for bringing the purchased land into bearing, and providing proper buildings, suitable paths, roads, and drains. In Ceylon it is considered better to choose an easterly or northerly aspect; for though the morning sun falling on the dew is said to injure the plant, and the setting sun to improve its fruit, the advantage of shelter outweighs these considerations. The south-west monsoon is apt to exercise a blighting influence, curling up and withering the few leaves it does not beat off the trees. In Ceylon, the best soil is of a deep chocolate colour, friable, and abounding with blocks and small pieces of stone. Such patches of land are generally found at the bottom of the escarpments of the hills, or in elevated valleys, and rarely on the slopes. Quartzose land must be carefully avoided, and clay is equally bad. A good surface soil should have at least two feet of depth, as the coffee tree has a long tap root. A nursery must be proportioned to the extent of land to be culti-

vated, and situated with regard to proximity to the extended fields. The seed-grains are sown six inches asunder; if the land become parched, it will be well to shade it with green branches, and irrigate it night and morning; should a long continuance of rain follow the sowing, the seed sometimes decays in the ground. It requires from six weeks to three months, according to moisture and warmth, before it germinates, and in four months more the seedlings are ready to be transplanted.

The labourers on the Ceylon coffee estates, about 220,000, are principally from the districts of Madura, Tinnevely, Tanjore, Trichinopoly, and Mysore. They arrive between May and October, and return in January and April *via* Manar. Kandians and the lowland Singhalese were found unsuitable for the work, besides being too few; and the arrivals at and departures from the ports of Ceylon of Tamil coolies, from 1841 to 1873, were—

	Arrived.			Departed.		
	Men.	Women	Children.	Men.	Women.	Children.
1841	4,523	363	164	4,243	274	117
1842	9,025	279	166	10,691	345	228
1843	6,298	162	248	18,977	194	482
1844	74,840	1,181	724	38,337	825	535
1845	72,526	698	177	24,623	145	36
1846	41,862	330	125	13,833	48	23
1847	44,085	1,638	417	5,897	79	33
1848	12,368	504	229	12,749	229	15
1868	55,121	...	...	...	...	...
1869	57,671	...	...	...	...	...
1870	65,224	...	...	...	...	...
1871	88,229	...	...	...	...	...
1872	80,121	...	...	...	...	...
1873	85,000	...	...	...	...	...

During the years 1841-46 the Tamil labourers must have saved or remitted to their country from £385,000 to £400,000. But against this pecuniary advantage a great loss of life had to be placed. During the eight years above enumerated no less than 70,000 Malabar coolies died.

In *Southern India*, Cannon's Mysore was grown on a range of hills from 3500 to 4000 feet above the sea, having the benefit of the south-west monsoon, which very seldom fails at all, never entirely, and it has also the tail-end of the north-east monsoon. Its peculiar qualities were closeness of texture and richness of flavour. From the year 1832, Europeans entered into the agriculture, and Cannon's Mysore coffee soon attracted the attention of dealers, for it rose from 1846-47 to an average of 96 shillings the cwt., and had fetched so high as 115 shillings; and the selling price of native-grown coffee in Mysore rose from one rupee per maund of 28 lbs. to six and eight rupees per maund. The first plantations by Mr. Cannon were at Chikmoogloor, near the Baba Booden hills; the next were at the Munzerabad Ghat; and for many years the Mysore coffee districts were confined to the region of the Western Ghats and the Baba Booden hills. Attempts were made to cultivate coffee in the open country, but without success; it seemed to require forest land, and considerable elevation and moisture.

In the year 1862 the demand for coffee lands in *Southern India* was at its highest. Coffee plantations two years old were then selling at £12 to £14 the acre; of three years' growth, £15 to £17; of four years, £18 to £20; and in

full bearing, £20 to £25,—when coffee was worth 75 to 95 shillings the cwt. From that year commenced doubts in the minds of planters, but ultimately, in some districts, the result was disastrous. From those yielding three cwt. per acre, and they were the great bulk, there were no returns. In Coorg, the enemies of the coffee tree—the bug, the rot, the borer, insufficient capital, and the want of the owner's eye—were numerous. In Coorg there were cheap labour, cheap food, and good roads, yet in the autumn of 1866 the estates were unsaleable.

In the south of India land was sold from Rs. 10 upwards to Rs. 50 per acre from Government. In 1876, some natives of Wynad asked Rs. 30,000 for 150 acres of forest land, equal to Rs. 200 per acre. In *Travancore*, in 1875-76, 7817 acres were sold for Rs. 2,14,761, or Rs. 28 per acre; the highest price in a single lot realized was Rs. 82 an acre. It was estimated that an acre of jungle on the Neilgherries could be brought into bearing for Rs. 200, including all expenses. A good dwelling-house will cost Rs. 4000; the pulping house, machinery, and godowns, Rs. 4000 more. The entire cost of bringing 100 acres into bearing was generally reckoned at Rs. 30,000.

Soil.—In *British South India* the soil recommended is a good rich garden land, the situation high, and not liable to inundation, and well sheltered from prevailing storms. A hill affording shade to the shrub has been found beneficial in all tropical climates; if grown fully exposed to the sun, the berries ripen prematurely. A beautiful species of *Strobilanthes*, which grows in Coorg, is called the coffee plant, because thought to indicate soil suited for coffee trees. Coffee delights in a moderately warm and moist atmosphere; but Coorg is deluged with rains during six months of the year, and scorched by the sun for the other half. In hilly country, planters protect the soil from being washed away, by terracing, and cutting level drains across the hill face. Ceylon is peculiarly adapted to the growth of coffee, being a mountainous island, with three sides open to a vast expanse of ocean. Droughts do occur, but even in the driest seasons the hills attract clouds, which frequently pour down refreshing showers. The heavy mists and dense clouds, which sometimes shut out the sun for days together, or roll sluggishly along the mountain-sides, are amongst the planter's best auxiliaries. The shrub luxuriates in a rarefied, temperate, and moist climate, and delights in frequent but not heavy rains on the slopes, where there is a good natural drainage, for any lodgment of water about its roots soon proves fatal.

Sowing.—The seed reserved for sowing must be put into the ground quite fresh, as it soon loses its power of germination. The quality of the seeds from young stems is not so good as that from stems four or five years old. Clean, well-formed berries, free from injury by insects or the decay of the pulp, should be selected. These berries must be sown in a nursery, either in small, well-manured beds (or in pots in a sheltered spot), not too close, as it is well to leave them where sown until they acquire a good growth; indeed, it is better if they are removed at once from the bed where they are sown, to the plantation. The seedlings appear in about a month after the seed is sown. Coffee seedlings from the nursery may be planted out in seven

months. A bushel will rear 10,000 plants, covering ten acres. Coffee trees should be planted in rows six or eight feet apart, in holes 20 inches deep by 18. They should be regularly lopped and pruned, so as to admit the sun to ripen the fruit on every branch. The trees are generally in bearing in the third or fourth year.

The coffee tree, if allowed, attains 15 feet in height, but to facilitate plucking it is kept down to 3 or 3½ feet above the ground. This makes the shrub shoot out laterally, and produce at least 25 per cent. more than it would do if permitted to attain its natural height and to occupy more land. In topping, care must be taken to cut off the uppermost pair of branches, as their weight when in fruit would split the head of the stem. Nature is constantly throwing out young shoots, which try to grow upwards, but they must be carefully broken off, as they are a great and useless drain on the juice of the plant. Never cut a sucker or branch off a tree, but always break it. It is necessary to protect the trees from being burned up by the sun, by planting them sufficiently close to form a good cover, and protect the soil from exhaustion by systematic weeding and substantial manuring.

The age to which the coffee tree will survive has not been ascertained. Native plantings are to be found in many parts of Ceylon, Wynad, Mysore, etc., containing trees of an age far beyond the power of the oldest inhabitant to define, and which have very probably been flourishing for generations.

Fruit.—From flowering to harvest is from eight to nine months. A field in full bloom is a beautiful sight. The clusters of white blossom contrast prettily with the deep green leaves, and the whole at a distance looks as if it had been snowed on. The flower only lasts one day. If the atmosphere be dry, the bloom is sometimes lost, as it will not set without moisture; mists and light drizzling rains are the most favourable weather at this time. The fruit grows on a footstalk of half an inch, in clusters round the joints of the lateral branches, and when of full size, but still green, resembles small olives. A month before ripening it turns yellow, and through different shades to ruby red when it is ripe, and from its likeness to a European fruit is technically called 'cherry.' During the latter part of its growth, particularly, it requires a great deal of moisture, otherwise the bean will be shrivelled, not perfectly formed, light, and of inferior quality. When the fruit becomes blood red it is perfectly ripe, and should be gathered. Once ripe, the sooner it is plucked the better. Within the pulp is the parchment surrounding the two beans, then the semi-transparent silver skin, and then the two berries,—occasionally only a single berry, generally small and deformed, called pea-berry, which realizes in Britain 10s. to 12s. per cwt. more than the best quality of the usual sort. The parchment and silver skin comprise about 1 per cent. of the fruit. The pulp has a sweet, sickly saccharine flavour. In 1875 it was proposed to ferment the pulp into a spirit.

Ceylon coffee is known in the market as washed coffee. Mocha coffee is designated husked coffee, and is perhaps a better coffee bean.

Mocha coffee is cultivated in very small fields of a few acres in extent, and on level ground; the fruit is allowed to remain on the tree until it

drops or is shaken down, and is gathered from the ground. In that hot, dry climate the pulp shrinks and becomes rather hard, and then by pounding by the hand, the berries, of a light grey colour, are separated from the silver skin, the parchment, and the dried pulp, at one operation.

In *Ceylon*, after the berries are plucked and brought in baskets to the warehouse, the pulp or fleshy part is removed. The berries are placed in heaps in a loft, above the pulper. They are then sent down a shoot, into which a stream of water is conducted, and are thus washed into the pulper. The pulper is a roller covered with a sheet of copper, made rough like a nutmeg grater. The berries follow it as it goes round, but there is only room for the seed to pass, so that the pulp is squeezed off and carried away by a stream thrown off by the water wheel, while the naked coffee drops on the other side. The seeds are still covered with glutinous matter, to remove which they are washed in a cistern, the inferior ones floating, while the good ones sink. The coffee seeds are then laid out on the barbecus (which are square platforms of brick, plastered with chunam, with sides a foot high), where they dry in the sun for about three days, and are afterwards stored in godowns. In the moister parts of Ceylon, the curing process is not completed on the estate. After removing the pulp, the beans, enclosed in parchment, are dried for about three days, and are then forwarded to Colombo, where, by means of special machinery, the parchment and the silver skin are removed from the berries, which are of a bluish colour when they are ready for shipment.

The commercial value depends on the size, form, and colour of the beans, and their flavour. Apart from tasting, which should always be done when practicable, one of the best and most simple tests by which the merits of coffee may be approximately arrived at, is the amount of aroma which arises when the berries are freshly ground. In the better qualities the bean will grind with a dark appearance. In some kinds, especially those of the Mysore and Peninsular growths, the berries when roasted are perfect, owing, in a great measure, to their hardness and thickness when in a raw state, which would account for their resisting the application of heat better than the less bulky berry of Plantation Ceylon. Mocha, on the contrary, not only presents a most ragged appearance after it has undergone the process of roasting, but often exhibits many different shades of colour.

Coffee is one of those articles of which, though the inferior qualities may be unsaleable in Europe, a superior sample will always meet with purchasers about its real value, as it is consumed by a class who will have it, and who consequently must pay for it as a luxury. In 1847 and 1848, although 'Ceylon plantation' was sold from 35s. to 50s. per cwt. as a general price, a few samples from the highest estates brought 85s. and 92s.

The Abyssinian coffee berry, also excellent, is inferior in qualities to that of Yemen; it is larger. The Indian berry ranks next. In Arabia the picked berries are roasted in a ladle until they crackle, redden, and smoke a little, and are carefully withdrawn from the heat long before they are black or charred, and are then put to cool on a glass platter. They are then bruised (not powdered) in mortars, poured into hot water, and

boiled gently and not long, all the time stirring with a stick; add when boiling a few aromatic seeds, 'Heyl,' and a little saffron and cloves. The liquor is then strained.

In Ceylon and Southern India, mechanical contrivances have been largely applied in the process of preparing the coffee bean for the market. Amongst others, Mr. Clerihew's fanners and Greig's pea-berry machine may be mentioned.

Manure.—The returns obtained from manured plantations have been richly repaid by a high standard of bearing. Cattle manuring is the most generally available. A good manure is found in the decayed leaves that fall from the trees themselves, to which may be added the weeds produced in the plantation, dried and burnt. These, dug in, are always useful as a manure, and should be utilized. Cow-dung is the best manure for the seed-beds. The pulps of the coffee can be added to the fertilizing mass; indeed, rotting wood, weeds, burned dolomite, and anything which will produce ammonia, should be taken care of. But it has been supposed that many of the coffee plant enemies, fungi and insects, are germinated in the decaying manure. The manuring of a whole estate at one time is seldom required, but every part of the plantation should be brought under its operation every second or third year. One Ceylon estate, which was wholly manured without limit as to expense, is said to have returned about 20 cwt. to the acre; lime, cattle manure, and mould from the neighbouring forest were used in a compost, and the soil turned up everywhere round the plant to apply it (Coffee Planting in Ceylon, p. 52). The richest mould cannot yield crop after crop for years, unless a proportionate return be made to it. The plant and its fruits are differently composed, and it is more necessary to provide for the fruit than the stem which supports it. A large proportion of the bean is nitrogen, which science teaches may be produced by certain phosphates, etc., under particular circumstances. A chemist can in a few days and at trifling cost produce what the uninitiated might spend a lifetime and a fortune over without attaining.

About 1849, Mr. Herepath gave the following analysis of 150 grains of fine West India coffee berries, for the purpose of determining the best manure for the West India coffee estates. Deducting the carbonic acid, 100 grains of ash gave,—phosphate of lime, 45.551; phosphoric acid, 12.801; potash, 16.512; soda, 6.787; magnesia, 5.942; lime, 2.329; sulphate of lime, 1.751; with small quantities of sulphuric acid, chloride of sodium, and silicic acid.

In searching for a manure, where bone-dust, cow-dung, and wood ashes can be cheaply procured and applied, nothing can be better; a little powdered gneiss might be an improvement. Failing bone-dust and cow-dung, recourse must be had to ammoniacal manures, such as guano, and to lime. The dolomite of the interior of Ceylon contains, according to Dr. Gyax, the proper proportion of phosphoric acid, in the shape of apatite or phosphate of lime. Dolomite is plentiful in Southern India.

In a subsequent communication from Mr. Herepath, of date 13th June 1858, addressed to Mr. Walters, regarding a chemical analysis of Ceylon coffee, he reported that 1000 pounds of raw coffee

berries of Ceylon plantation's growth, contained the following mineral ingredients:—Potash, 87 lbs.; lime, 2½ lbs.; magnesia, 5½ lbs.; peroxide of iron, ¼ lb.; sulphuric acid, 2½ lbs.; chlorine, ¾ lb.; carbonic acid, 11½ lbs.; phosphoric acid, 7 lbs. And he mentioned phosphoric acid, sulphate of lime, and carbonate of magnesia as the principal ingredients required for manure. About 100 pounds of Peruvian guano, with 7 or 8 pounds of ground gypsum, 10 pounds of magnesian limestone, and 1 pound of salt, mixed up with Ceylon vegetable mould or the ashes of the wood clearances and some pounded granite or quartz, would make a good manure for 1000 pounds of raw berries. (Bom. Stand. Jan. 1859.)

Profits—Losses.—In Southern India and in Ceylon there has been money made in coffee planting by Europeans, but chiefly in their land speculations. But there have been great and general losses, sweeping away the little savings of servants of Government and speculative persons, and in 1880–81 and 1882 there was a general loss. The yield of coffee varies greatly with the seasons; but the trees have insect and vegetable enemies which have caused ruin,—the white, brown, and black bug, the black and white grub, the leaf disease, the coffee rat, the mole cricket. The first regularly worked Ceylon estate was opened in 1825, but the bug does not seem to have appeared in large quantities till 1845; then, however, it spread with such rapidity, that in 1847 a very general alarm was taken by the planters, about the same time that the potato, vine, and olive diseases began to create alarm in Europe. The coffee bugs seem, however, to be natives of Ceylon, for the white bug has been found on orange, guava, and other trees, as also on beetroot and other vegetables; and the brown bug attacks the guava, hibiscus, ixora, justicia, and orange trees,—indeed, every plant and tree, and even the weeds, on a coffee estate, particularly such as are in gardens.

When a coffee tree is attacked by the bug, it is deprived of its sap and its nourishment, while the fungus, which never fails to attend on the bug, prevents restoration, by closing the stomates through which the tree breathes and respire. Bug, Mr. Nietner tells us, exists on all the estates; none are believed by Mr. Nietner to be quite free from it, and he reasonably asks, 'Am I wrong in saying that if there was no bug in Ceylon, it would, at a rough guess, produce 50,000 cwts. of coffee more than it actually does?' and that quantity represents a value of £225,000. The brown and white bug, and the black and white grub, he adds, are the only important enemies of the coffee tree, and the destruction caused by arhines, limacodes, zeuzera, phymatea, strachia, and the coffee rat appear to be of a more local and occasional nature. The three chief pests are the white bug, the brown bug, and the black bug.

The appearance and disappearance of the coffee bug is most capricious. It comes and goes, now rapidly spreading over a whole estate, now confining itself to a single tree amongst thousands; here, leaving an estate in the course of a twelve-month, there remaining permanently; sometimes spreading over a whole estate, sometimes attacking a single field, then leaving it for another and another. But the white bug prefers dry, and the brown damp localities, the latter being found

more plentiful in close ravines and amongst heavy rotting timbers than on open hillsides, and it is probably to this predilection that the shifting of the insect is attributable. The bug seeks out the softest and most sheltered parts of the tree, the young shoots, the under-sides of the leaves, and the clusters of berries.

The injury done by the white bug seems more severe than that from the brown, but, not being so plentiful as the latter, it is of less general importance. The white bug is especially fond of congregating amongst the clusters of berries, which drop off from the injury they receive, and trees often lose their entire crop in this manner. The injury produced by the brown bug is the weakening of the tree, and is thus more general, but the crop does not drop off altogether nor so suddenly. With white bug on an estate, the crop can hardly be estimated; with brown bug it can.

The *White or Mealy Bug* is the *Pseudococcus adonidum*. The male insect is of a dirty brownish colour, and slightly hairy. It is very minute (very much smaller than the female, only about half a line long), and resembles certain small Ephemeridæ or May-flies. The female is oval, brownish-purple, covered with a white mealy powder, which forms a stiff fringe at the margin, and at the extremity of the abdomen two setæ. The larvæ and pupæ are active, and move about. The insects, in all stages of development, are found in Ceylon all the year round, chiefly in dry and hot localities, on the branches of trees, and on the roots to one foot under ground. Mr. Nietner says it is identical with the species naturalized in the conservatories of Europe. It is preyed upon by the *Scymnus rotundatus*, a minute beetle of the ladybird tribe, of the size of a pin's head, black and pubescent; also the yellow-coloured and common *Encyrtus Nietneri* and the black-coloured scarce *Chartococcus musciformis*, two minute Hymenoptera (wasps), only $\frac{1}{2}$ " long, and the minute whitish mite, *Acarus translucens*. Of the members of this family of insects, the Coccidæ, some, as the cochineal and lac insects, are of great economical importance, but others, as the sugar-cane blight of the Mauritius, the *Aspidiotus*, and the coffee bug, are excessively baneful to the gardener and agriculturist.

The *Brown Coffee Bug*, *Lecanium coffeæ*, Walker, establishes itself on the young shoots and buds, which it covers with a noisome incrustation of scales, enclosing its larvæ, from the pernicious influence of which the fruit shrivels and drops off. It is a Coccus, and a number of brownish wart-like bodies may be seen studding the young roots, and occasionally the margins on the outside of the leaves. Each of these warts is a transformed female, containing a large number of eggs (700), which are hatched within it. When the young ones come out of their nest, they may be observed running about on the plant, looking like woodlice; but shortly after being hatched, the males seek the under-sides of the leaves, while the females prefer the young shoots as their place of abode. The larvæ of the males undergo transformation into pupæ beneath their own skins, and their wings are horizontal, and their possession of wings may possibly explain the comparatively rare presence of the male on the bushes. The female retains her powers of locomotion until nearly of full size, and it is about this time that

her impregnation takes place. The pest does not produce great injury until it has been two or three years on an estate; but at length the scales on the plants become numerous, the clusters of berries assume a black, sooty look, and a great number of them fall off before they are mature. The young shoots have a disgusting look from the number of yellow pustular bodies forming on them, the leaves get shrivelled, and on many trees not a single berry forms. The coffee bug first appeared in 1843 on the Lupallu Galla estates, and it, or a closely-allied species, has been observed on the *Citrus acidæ*, *Psidium pomiferum*, *Myrtus Zeylanica*, *Rosa Indica*, *Careya arborea*, *Vitex negundo*, and other plants, and most abundantly on the coffee bushes in moist places. It reappears though eradicated, and is easily conveyed on cloths from one place to another. Dr. Gardner, whom Sir J. E. Tennent quotes (ii. p. 246), was of opinion that all remedies had failed, and that it must wear itself out, as other blights do. The male of the brown or scaly bug, *Lecanium coffeæ*, is of a clear light pinkish-brown colour, slightly hairy, and very pretty. It is more delicate than the male *Pseudococcus*. The females when young are yellowish, marked with grey or light brown; and old individuals are light brown, with a dark margin. It affects cold, damp, and close localities, 3000 feet in height, and the propagation, as in the white bug, is continuous. The brown bug is much infected with parasites, amongst which the most common are eight minute Hymenoptera (wasps) with brilliant colours; but a mite, the *Acarus translucens*, and the larva of the *Chilocorus circumdatus*, a kind of ladybird, also feed on the bug. In the larva state, the male and female brown bug are not distinguishable. The number of eggs produced by a female brown bug is about 700. Those of the white bug are not so numerous, but their propagation in Ceylon is continuous throughout the year, and this explains their great abundance compared with cold countries, where the produce is one generation of young annually. The brown bug, particularly the full-grown female, is dreadfully infested with parasites, which thus greatly help the planter. Indeed, it is a question whether coffee planting could be carried on without their aid in the destruction of the bug.

The *Black Bug* is *Lecanium nigrum*, but the female only is known. In colour it is from yellowish-grey to deep brown, and almost black in age, and of a shield-like shape. It occurs alone, but also intermixed with the brown bug; but it is much less abundant, and therefore not demanding the planter's attention. Its occupation of a coffee or any other tree gives rise to the appearance of a glutinous saccharine substance, which has received the name of honey-dew. This is either a secretion of the bug, or the extravasated sap which flows from the wounded tree, or probably a combination of both. A fungus, or two fungi, the *Syncladium Nietneri* and *Triposporium Gardneri*, seem to depend on this for vegetation, as the honey-dew and the fungus disappear with the bug.

Another bug, the *Strachia geometrica*, of a yellowish colour, but marked with grey and orange on the upper side, was found at Badulla. It feeds upon the juice of the young berries, three per cent. or more of which were said to have suffered from it. It is allied to the green or foetid

bug; but though it may occasionally cause destruction, there is no fear of it ever becoming a serious nuisance.

One of the Aphidæ, *Aphis coffea*, the Coffee Louse, is found in small communities on the young shoots and on the under-side of the leaves of the cocoanut tree, but the injuries it occasions are insignificant.

Several caterpillars, the *Aloa lactinea*, the *Orgyia Ceylanica*, *Euproctis virguncula*, the *Trichia exigua*, *Narosa conspersa*, the *Limacodes graciosa*, and a species of *Drepana*, are found on the coffee trees, but they do not cause much injury. Another caterpillar, however, though fortunately not abundant, the *Zeuzera coffea*, destroyed many trees, both young and old, by eating out the heart. It resembles the caterpillar of the goatmoth of England, and is as thick as a goose quill. It generally enters the tree 6" or 12" from the ground, ascending upwards. The sickly drooping of the tree marks its presence.

Black Grub.—The larva of the moth called *Agrostis segetum* is the very destructive black grub. This pest is about an inch long, and is most abundant from August to October. The caterpillar lives in the ground, but comes out at night to feed, and is very common and injurious. It attacks not only coffee trees, but all sorts of vegetables and flowers, and is very destructive to gardens and in the field, as it eats everything that is artificially raised, despising grass and weeds. It generally appears only on certain fields, and will not go over an estate. The insect is not confined to Ceylon; its ravages are well known in India, at the Cape of Good Hope, and in Europe, where it injures the grain and beetroot crops. In Ceylon it only attacks young coffee trees, gnawing off the bark round the stem just above the ground. Where the trees are very small, they are bitten right off, and the tops sometimes partially dragged under the ground, where the grubs may easily be discovered and dislodged. The damage which they inflict on plantations may be estimated, when it is mentioned that Mr. Nietner lost through them in one season, in certain fields, as many as twenty-five per cent. of the young trees he had put down.

The larva of a little moth, the *Galleriomorpha lichenoides*, and three caterpillars of the *Boarmia leucostigmata*, *B. Ceylanica*, and *Empithecia coffearia*, are found on coffee trees and other plants from September to December.

The larva of the *Gracillaria coffeifoliella* mines the coffee leaves; it is very common, but of no importance to the planter.

The ravages of the large, well-known, beautiful locust, the *Phymatea punctata*, with its scarlet abdomen and yellow and bronze above, are not continuous in the coffee trees, but are occasionally very annoying. A swarm settled on a field of one-year-old coffee, and gnawed the bark off the stems, causing them to throw out many shoots, and permanently disfigured five per cent. of the trees. They do not touch the Illuk grass, *Saccharum Konigii*, Retz., but seem only to attack cultivated plants and trees. At Tangalle they destroyed tobacco plantations, and at Matillee in Kandy the native grain crops were injured by these locusts. The larvæ and pupæ are as destructive as the perfect insects; but this seems, fortunately, the only species of locust that does any

real injury in Ceylon, and this injury is in importance not to be compared with that done by other species in other countries.

White Grub.—Under this name are included the larvæ of various Melolonthidæ, the cockchafer of Ceylon, which do much harm to coffee plantations, young and old, by eating the roots of the trees. Mr. J. L. Gordon of Rambodde considered the white grub to be by far the greatest enemy of the coffee trees which the planter had to contend with, as he never knew a single tree recover after their attack; and he adds that they had destroyed, at Rambodde, in two years, between eight and ten thousand trees of fine old coffee. Mr. Gordon used to dig up the soil at the foot of the trees, and take out such grubs as he could find.

Weevils.—The family of the weevils is one of the most extensive amongst the beetles; and in Ceylon, as in Europe, many of its members do much injury to agricultural produce. Mr. Nietner had seen nearly the whole crop of sweet potato (*Batatas edulis*) of the Negombo district destroyed by one of them, the *Cylas sturcippennis*. The common rice weevil, *Sitophilus oryzae*, is another instance; and one of the cocoanut destroyers of the Ceylon low country, the *Sphærophorus planipennis*, belongs also to this family. The *Arhines?* destructor, a beautiful green weevil, Mr. Nietner had not found do any injury to coffee trees; but Mr. J. Rose of Matturatte, writing to him, said, 'The mischief they do is plentiful, and if they were as plentiful as the bug, they would be the planter's worst enemies. Five or six acres were completely covered with them, and they consumed almost every leaf. Year after year they appeared upon the same place. One year they appeared upon a neighbouring estate in great force, and ran over at least forty acres. The same thing occurred on three other estates.'

The *Acarus coffea*, or coffee mite, is so small as to be hardly perceptible to the naked eye. It is closely allied to the Red Spider of the hothouses of Europe. Nearly all the year round, but chiefly from November to April, it feeds on the upper side of the coffee leaves, giving them a brownish, sunburnt appearance. Individual trees suffer from its attacks, but the aggregate damage from it is not great.

The *Coffee Rat* of Ceylon, the *Golunda Elliotti*, occasionally commits much damage, seemingly to get the bark, for they do not seem to eat the berries. With their long sharp incisors they bite off with great smoothness the smaller and younger branches, generally an inch from the stem; and should the plants be quite young, just taken from the nursery, they bite them right off a few inches from the ground, and carry them to their nests in hollow trees. They appear irregularly, at intervals, from the jungles, and there is hardly an estate in Ceylon that does not now and then receive a visit from them. The natives of Ceylon say that their food in the jungles is a species of *Strobilanthes*, called Nilu in Singhalese, and that the rats only issue from their forest residence and attack the coffee estates when their forest food fails.

The injuries from other animals is not serious. A *squirrel*, the *Sciurus Layardi*, which eats the coffee berries, is common on Ceylon estates; the pulp alone is digestible, and the coffee beans are dropped on logs of wood and on the ground. Jackals and monkeys occasionally do the same;

this is called parchment coffee. A deer will now and then come from the forest and nibble the tops of the young trees.

Mantis tricolor, *Nietner*, the Mantis of the coffee tree, is green, lower wings reddish, with large blackish spot at the posterior margin. The female is 1 inch long, with $1\frac{1}{2}$ inch of an expanse of wings. The male is considerably smaller. The eggs are deposited upon coffee leaves, in cocoon-like masses of $\frac{2}{3}$ of an inch in length, but drawn out further at each end.

And what are the remedies to all these coffee plagues?

Mr. Nietner tells us that several means of checking the extension of the bug have been proposed and tried. Amongst these, the introduction of the red ant; but their bites are so fierce and painful, that the coolies refused to go amongst the trees while the ants were there. Rubbing off the bug by hand has been tried, but it can only be attempted upon young trees without crop; and Mr. Nietner, although allowing that an immense quantity of bug is thus destroyed, is nevertheless of opinion that the effect is but trifling. He thinks that the application of tar to the roots is a good suggestion, although he is obliged to admit that hitherto no important results have been achieved by it. He adds that high cultivation seems to have the effect of throwing it off. But as the bug seems to depend on locality, Mr. Nietner does not look for any beneficial result so long as the physical aspect is unchanged. He thinks that if the open, warm, airy pattenas were cultivated, which the experiments on a large scale, tried at Passelawa, show that they can be, the brown bug, which is the great destroyer, would not find the conditions favourable to its existence; or perhaps, if estates as a rule were made smaller than they generally are, if the reduction in acreage were counterbalanced by a higher system of cultivation, universally carried out, the bug would not be so numerous as it now is.

In the southern parts of the Peninsula of India, the *Borer* is a name given to the larva of a coleopterous beetle, the *Xylotrechus quadripes* of Chevrolat, which injures coffee trees. The insects are generally about the diameter of a small quill, are always confined to the wood, and never enter the bark until the larva has done its work, passed through the pupa stage, and is about to escape in the form of a beetle. The eggs are deposited by the female near the root of the tree, and the pupa borers tunnel up the heart of the plant. It does not stop short at the destruction of crop, but actually kills the trees. This enemy has been confined to the Madras Presidency and Mysore, leaving Ceylon unscathed. The borer carries on the work of destruction entirely in the interior of the stem, the wood of which it rapidly reduces to a sawdust-like powder, leaving the bark intact. At first the only signs of the presence of the foe are a few small round holes in the bark, but gradually these holes increase in number as the grubs get more numerous, the leaves get sickly and fall off, and finally the tree withers and dies. If this devastation were confined to a hundred or even a thousand or two of trees, the planter could afford to grin and bear his loss; but instances are numerous in which an entire estate has been completely denuded of trees by this tiny but formidable insect. For a time the borer seemed destined to

defy all attempts to arrest its ravages; but it was observed that the beetle, which lays the eggs from which the grubs are hatched, avoided shade, and affected light and sunshine. Thus much known of the habits of the foe, the protection of the coffee plants by the shade of larger trees naturally suggested itself, and has been found a most effectual remedy.

The *Leaf Disease*, or Coffee Leaf Disease, of the coffee plant seems first to have appeared in Ceylon in 1869, and prominently in S. India in 1870. It is the *Hemileia vastatrix*, a fungus which fixes on the under-sides of the leaves, causing spots or blotches, at first yellow, but subsequently turning black. These blotches are covered with a pale orange-coloured dust, which is easily rubbed off. The blotches gradually increase in size, until at last they have spread over the entire leaf, which then drops off, leaving the trees in a short time perfectly bare. The trees seem to recover in the spring of the year, but the fresh foliage is in its turn attacked, and the crop falls off. The yearly crop in Ceylon is said to have diminished 300,000 cwts. since its appearance, causing a loss of about $1\frac{1}{2}$ millions sterling. The leaf disease is a true endophyte, developing in the tissues of the leaf, and expanding outwards, as is the case with red rust of corn and grapes. Sir Joseph Hooker, writing to the Colonial Office, 6th August 1874, says the *Hemileia* belongs to a class of most minute parasitic plants, which includes the oidium of the vine and peronospora of the potato. Recent observations appear to establish the fact that similar plants are also present in the tissues of sheep affected with small-pox, and may probably be found to be sources of some familiar diseases in man and the lower animals. Hitherto no means have been discovered of extirpating these plants, whose seeds, of inconceivable minuteness, float in inconceivable numbers in the air, and whose growing parts are of such tenuity, that they can penetrate the most delicate living tissues of plants, which they kill by feeding on their substance. The spread of some of the kinds has, however, been effectually checked by the use of flower of sulphur, which it would not be difficult to apply to the coffee plant in Ceylon.

The *Hemileia vastatrix* has been termed the coffee leaf disease, as it confines its depredations to the leaves of the shrub. When suffering from this, the leaves are on their upper surface speckled with brownish spots, while the under surfaces are covered with orange-coloured dust, which consists of the spores of the fungus, or bodies by which it is propagated. The fungus itself consists of fine myceloid filaments, which permeate and live amongst the tissues of the leaf. When the spores are ripe, the shaking of the leaves by the wind is sufficient to disperse them, and each spore thus liberated is capable of germinating, and may become a fresh focus of the disease. Dr. Thwaites of Ceylon watched this process of germination. For some time the presence of the leaf disease caused little or no anxiety in India; but as its disastrous effects on crops became apparent, the planters began to realize the serious character of the distemper. Nearly all are now in accord in the view that manuring is the best remedy. Confident hopes were at one time entertained that the Liberian plant, which has been recently introduced, would defy the enemy. but unfortu-

nately this expectation has not been realized. It is very destructive in localities. It comes most suddenly and unaccountably in an estate, and disappears apparently without any reason. The effects of it are obvious: the leaf of the tree alone is attacked, after a little drops off, leaving the bough bare and unsheltered. The disease does not seem to attack the health and vitality of the tree; but when the shade afforded by the leaf to the berry is removed, the bud, blossom, or fruit is unduly exposed to the scorching sun, or to the wind, and the crop is lost. The disease often affects whole plantations simultaneously. Up to 1872 the Ceylon estates had suffered but little from this fungus. In Wynad, however, scarcely an estate escaped this leaf disease, whilst in the fifty-two estates of Travancore only one suffered, and that in a most insignificant degree.

Mr. G. Anderson, writing from Munzerabad in 1880, gave the opinion that potash, magnesia, and ammonia, in the form of sulphates, check and destroy *Hemileia* in coffee. He said he had used it in his experiments with excellent results,— $\frac{1}{4}$ to $\frac{1}{2}$ potash, $\frac{1}{4}$ to $\frac{1}{2}$ magnesia, and $\frac{1}{2}$ to $\frac{1}{2}$ ammonia,—and thinks that the cessation of growth which precedes an attack of leaf disease, is caused by a want of ammonia and other valuable food-constituents in an available form; that lime exerts a marvellous effect in setting free all the alkalis, and in converting nitrogen into ammonia; that potash, magnesia, and lime are required for the production of coffee, and are therefore removed from the soil, and that certain forms of potash and magnesia (especially those combined with sulphur) are inimical to the growth of fungi. He concludes that sulphates of potash, magnesia, and ammonia should be used immediately before the occurrence of disease; and lime should be employed early in the season to sweeten the soil, and set free its resources. He also recommends that phospho-nitrogenous manures, combined with other forms of potash, be applied to sustain and invigorate the trees.

Several learned botanists have suggested remedies for these plagues.

Baron F. von Mueller says that in 1878 the parasitic fungus growth on coffee plants in Ceylon caused a loss of £2,000,000.

In America the coffee plantations suffered not only from erysipoid fungi, but also from the *cemistoma* fly.

In the Karen hills, experimental cultivation of tea and coffee was introduced north-east of Tounghoo. Mr. J. Petley says in his report: 'Towards the end of the rains of 1880 large numbers of the Mole Cricket made their appearance, and much destruction was done amongst young tea and coffee plants, killing them by nipping off the tops, principally amongst the coffee, and boys were employed to catch and kill these destructive insects.'

Dr. Thwaites, in his report for 1874, says: 'Judicious cultivation enables the coffee tree to produce a succession of profitable crops, notwithstanding it may suffer from periodical attacks of leaf disease.' Nowhere has the disease committed such havoc as in native plantations, where cultivation is almost entirely neglected. Previously to 1870, planters were divided into two opposite camps,—the party that advocated manuring, and the party that opposed it. The inroads of leaf

disease have led to the matter being speedily and practically settled in favour of high cultivation.

In Ceylon, leaf disease first showed itself in 1869, in Madulsima, in the extreme eastern division of the coffee districts. Next year it spread to the Kandy side, and in 1871 it became general. During the seven years previous to 1870, the out-turn ranged from 4.10 cwt. per acre in 1864, to 5.22 in 1869. In 1870 the export was nearly 900,000 cwt., and the average per acre 5.53 cwt. In 1871, 1873, 1875, and 1877, the export rose above 800,000 cwt.; but (1881) the average per acre has never again reached 5 cwt., while in four years it has fallen below 3 cwt. The leaf disease has undoubtedly caused a falling off of production.

Colonel Beddome, the Conservator of Forests, is of opinion that the remedies proposed by Mr. Anderson in his Essay on Fungoid Diseases might be tried on small given areas, but considers the expense attending the trial prohibitive as regards large estates.

Leaf Rot, the *Kole Roga* of the Tamil race, is from another fungus, to which the name '*Pellicularia koleroga*' has been given. It appeared on the coffee trees of Mysore. It is an epiphyte, growing and developing upon the leaf, and only superficially attached to it. This enemy has been long in existence, although it is only quite recently that it has attracted attention. This disease is most common during the rains; and the leaves of the plants affected by it turn black and fall off, on which many of the berries also fall down, and those which remain are imperfectly ripened. On examining one of these leaves, the under surface will be seen covered with irregular greyish-white blotches, which, on being put under the microscope, are found to be filmy fungus patches, with the filaments of the fungus interwoven into a sort of web. This fungus has received from Mr. Cooke the name of *Pellicularia koleroga*, but it seems very doubtful whether it is not rather a result than the cause of the black rot. There can be little doubt that rot is partly caused by imperfect drainage, and overcrowding of the branches; and such being the case, the remedies will obviously be improved drainage and free pruning.

Stump.—Mr. Hull mentions that between 1860 and 1870, in Coorg, a blight appeared on the coffee plants, to which the name of stump was given, because of it being due to the stump of a particular forest tree peculiar to that district, felled in the process of clearing. Sooner or later all the coffee trees in the immediate neighbourhood of these stumps began mysteriously to die out, and the only remedy for the mischief was to remove the offending stumps as quickly as possible (Hull, p. 274). It has not been examined by any entomologist; but a great habitat of the coleopterous insects is below the bark of decaying wood, and such homes should not be left to them.

Dr. Shortt, a scientific planter, recommends carbolic acid as a protective agent against the leaf disease and other enemies of the coffee plants.

The Gardener's Chronicle also mentions having received from Dr. Thwaites of Ceylon a specimen of a minute fungus. A few trees were first noticed to be infected in May, but at the time of Dr. Thwaites' communication (24th July) two or

three acres were showing the fungus upon the leaves. These latter fall off before their proper time. Amongst more than a thousand species of fungi received from Ceylon, this does not occur; and it is not only quite new, but with difficulty referable to any recognised section of fungi. Indeed, it seems just intermediate between true mould and Uredo, allied on the one hand to *Trichobasis*, and on the other to *Rhinotrichum*. Though the fungus is developed from the parenchym of the leaf, there is not any covering to the little heaps, such as is so obvious in Uredo and its immediate allies, while the mode of attachment reminds one of *Rhinotrichum*. A new genus for its reception was therefore proposed. As the fungus is confined to the under surface of the leaves, and the mycelium is not superficial, it may be difficult to apply a remedy; but sulphur applied by means of one of the instruments which are used in the hop grounds in Kent, or syringing with one of the sulphureous solutions which have been recommended for the extirpation of the hop mildew, has been suggested.—*Rev. M. J. Berkeley; Colombo Observer.*

The Sydney Morning Herald describes an experiment on the aphid or coffee-moth, which shows that by a very simple application coffee plants may be freed from these destructive insects. A number of the insects were placed on a leaf under a powerful microscope. A drop of a simple solution of soda in water was let fall among them. They instantly left their hold on the leaf and fell dead. Such a solution could be applied without injury to coffee plants. Sulphur has hitherto been the favourite treatment.

The following is a list by Mr. Nietner of some of the enemies of the coffee plant in Ceylon:—

1. *Pseudococcus adonidum*, White or Mealy Bug.
Parasites.
Scymnus rotundatus, *Motch. Er. Ent.* 1859.
Encyrtus Nietneri, *Motch.*
Chartocerus musciformis, *Motch.*
Acarus translucens, *N.*
2. *Lecanium coffeæ*, *Walk. List. Ins. B. M.*, Brown or Scaly Bug.
Parasites.
Scutellista cyanæa, *Motch.*
Cephalota purpureiventris, *Motch.*
C. brunneiventris, *Motch.*
C. fusciventris, *Motch. in lita.*
Encyrtus paradiscus, *Motch. in lita.*
E. Nietneri, *Motch.*
Cirrhopilus coccivorus, *Motch. in lita.*
Marietta leopardina, *M. in lita.*
Chilocorus circumdatus, *Schönh.*
Acarus translucens, *N.*
3. *Locanium nigrum*, *N.*, Black Bug.
(*Syncladium Nietneri*, *Rabb. Dresd. Holwig*, 1858;
4. *Triposporium Gardneri*, *Berk. J. Hort. Soc.*
(*Lond.* 1849; a fungus.
5. *Aphis coffeæ*, *N.*, Coffee Louse.
Parasites.
Syrphus Nietneri, *Schiner in lita.*
S. splendens, *Doltsch.*
Micromus australis, *Hag; Verz. Wien., Z.*, 1858.
6. *Strachia geometrica*, *Motch. in lita.*
Lepidoptera.
7. *Aloa lactinea*, *Cram. pap. ex.*
8. *Orgyia Ceylanica*, *N.*
9. *Euprocitis virguncula*, *Walk.*
10. *Trichia exigua*, *Feld. in lit.*
11. *Narosa conspersa*, *Walk.*
12. *Limaodes graciola*, *Westw. Ent. cat.*
13. *Drepana?*
14. *Zeuzera coffeæ*, *N.*
15. *Agrotis segetum*, *Wien. V.*, Black Grub.

16. *Galleriormorpha lichenoides*, *Feld. in lit.*
17. *Boarmia Ceylanica*, *Feld. in lit.*
18. *C. leucostigmatica*, *Feld. in lit.*
19. *Eupithecia coffearia*, *Feld. in lit.*
20. *Fortrix coffearia*, *Feld. in lit.*
21. *Gracillaria? coffeifoliella*, *Motch.*

Diptera.

22. *Anthomyza? coffeæ*, *N. in Motch.*

Orthoptera.

23. *Phymatea punctata*, *D.*

Colcoptera.

24. *Ancylonycha*, *spec. ?* White Grub.

25. *Arhines? destructor*, *N.*

Aptera.

26. *Acarus coffeæ*, *N.*

Mammalia.

27. *Golunda Elliotti*, *Gray in Kel. Prod.*, Coffee Rat.

—*Agri-Hort. Soc. Madras Proceedings; Rev. M. J. Berkeley; Bidie, Coffee Planting; Bonyng's America; Eng. Cyclop.; Madras Exhibition Sur. Rep.; Gardener's Chronicle; Hassal, Food and its Adulterations; Sir J. D. Hooker, Despatch from Governor of Ceylon; Report of Dr. Thwaites on the Coffee Disease, 6th August 1874; Hull on Coffee Planters; Journ. Ind. Archip.; Mason's Burma; Newspapers—Madras Times, Madras Statesman, Colombo Observer, Bombay Standard, Agricultural Gazette of India; Nietner on the Enemies of the Coffee Plant, Ceylon, 1861; Colonel Onslow on Mysore Coffee Planting; Playfair's Aden; Royle, Prod. Res. of India; Shortt; Simmonds' Colonial Magazine; Simmonds' Commercial Products; Sir J. E. Tennent's Ceylon; Baron von Mueller. See Drepana.*

COHUNE OIL, a product of the kernel of the *Attalea funifera*, *Martius*, a palm tree, native of S. America. It is something like cocoanut oil, but is more oleaginous. Its introduction into S. Asia merits attention.—*Seeman.*

COILADDY. About a mile to the west of Coiladdy is a mound that prevents the waters of the Cauvery running into the Colerun.

COILGUDDY, a pagoda eight miles east of Madura.

COIMBATORE, a collectorate of the Madras Presidency, in the south of the Peninsula. Its chief town of the same name is in lat. 10° 59' 41" N., and long. 76° 59' 46" E., and is 1350 feet above the sea at the palace.

The district occupies an area of 7432 square miles, over which about 7000 villages and hamlets are spread, possessing a population of 1,763,274 human beings. It has but little rain. The produce is grains, mostly of the dry description, cotton, sugar, tobacco, and hemp. The climate is warm, and not unfrequently oppressive, being completely hill-locked. The aspect of the country is arid and unpleasant in the extreme. Its northern part, called Collegal, has numerous small jungle-covered hills; and to the west of Collegal are the Neilgherry Hills. The Annamallay Hills are in the S.W. border of Coimbatore, and are richly clothed with valuable forests, with many elephants; and some of the lower hill ranges from the Neilgherries, between which is the valley and gap or pass of Palghat leading to the western coast. The Guzzlehutty pass leads up the deep valley separating the Neilgherry Hills from Collegal. The Annamallay (literally Elephant Hills) are occupied by the Kader,—open, independent, straightforward men, simple, and obeying their mopens or chiefs implicitly. They are strong built, active,

with woolly hair and something of the African features, and file their front teeth to a point. The women wear enormous circles of pith in the lobes of their ears, which they distend down to their shoulders. A black monkey is their greatest dainty.

The other hill and forest tribes, chiefly residing on the Animallay, are the Malai Arasar, Irular, Pulyar, and Mandanar, subsisting precariously on wild fruits and roots, by the chase, or the sale of jungle produce. 40·8 per cent. of the population were Vellalar cultivators, 13·7 per cent. Pariahs, 8 per cent. Vannian or day-labourers, 5·3 per cent. Kaikalar or weavers, with artisans (Kammaan), Brahmans, washermen (Vannan), potters (Kusavan), fishermen (Sambadavan), barbers (Ambattan), and writers (Kanakan).

Coimbatore land is many times more valuable than it was forty years ago; and wheeled carriages, which were 603 in 1846-7, in 1867 were 4500. In Coimbatore two very different minerals pass under the common name of corundum. The one is true corundum of lamellar structure; the other softer and amorphous, but christature in its composition, apparently some form of hornblende. The mineral is abundant in the district, and easily procured at a small cost. Localities in Coimbatore supply the beryl, and are also supposed to have yielded the emerald, though Tavernier was not able to ascertain that any part of India, in his day, was yielding emeralds.—*Tavernier's Travels*, p. 144; *Lt.-Col. Hamilton, in littera*. See India, p. 324; Korumbur; Narapati.

COINS, Currency.

Monnoie,	FR.	Nagd, Sicca, . . .	HIND.
Mamreкке,	GKR.	Chilaoni,	"
Richtkeil,	"	Conio, Donaro, . .	IR., SP.

The Hindus altogether neglected history, and, after the Greek occupation of Bactria until the advent of the Mahomedans, the coins of the rulers furnish almost the sole evidence of the dynastic changes and their individual rulers in the country of the Kophones river, i.e. Bactria, Asia, and Kabul. The earlier of the Greek successors of Alexander used Greek. This was adhered to by Theodotus I., B.C. 256, of the time of Arsaces I.; of Theodotus II., B.C. 240, who reigned in the Kabul valley. Euthydemus, B.C. 220, reigned in the time of the expedition of Antiochus the Great, and was defeated in battle near Merv by the united Syrian and Parthian armies. He then urged Antiochus to receive him in alliance, and so extend the Greek influence to the Indus. A peace was concluded, and Euthydemus led the Syrian army through Bactria, i.e. by the route north of the mountains to the Kabul valley, and across the Indus, in B.C. 206. There Antiochus made peace with Sophagrasenus (Asoka), which that sovereign recorded by edicts on rocks and pillars in various parts of India, in characters exactly resembling those on the coins of Agathocles. In B.C. 205, Antiochus returned by way of Arachotia. Agathocles, B.C. 190, coined with Greek and Sanskrit; is supposed by Lassen to have ruled Kabulistan to the Indus; and Mr. H. T. Prinsep supposes him to have been the governor left by Antiochus in Kabul, after his treaty with Asoka. Pantaleon, B.C. 195, coined in Greek and Sanskrit. Eukratides, B.C. 178 (Prinsep, B.C. 181; Bayer, Wilson, B.C. 165; Visconti, Lassen, B.C. 175). He seems to have made an expedition to India in 165 B.C., and on

his return from it to have been murdered by his son. Numerous of his coins have been found in Bactria and Afghanistan; and Mr. H. T. Prinsep considers that he ruled originally in Bactria, subsequently made conquests in and south of Parapamisus in Kabul, and was the first of all the Greeks who coined in the bilingual Aryan inscription. The first use of two languages, however, is also ascribed to Agathocles, who used Greek and Sanskrit, while Eukratides used Greek and Aryan. Eukratides was certainly amongst the earliest of the Greek kings of Bactria, Kabul, and Arya, who adopted bilingual inscriptions on his coins, and his so doing is supposed consequent on his conquest of the Parapamisus, after assumption of the title of Great King. On his death, his wide dominion is supposed to have been broken into several independent kingdoms. Heliocles, B.C. 155, the parricide of Eukratides, used bilingual inscriptions on coins in pure Greek and Aryan. His rule, though short, extended over Bactria and the Parapamisus. Antimachus, B.C. 150, coined with Greek and Aryan. Bactria seems to have then passed under the sway of various Saca and Parthian and so-called Indo-Scythian rulers, and during the first six or seven centuries of the Christian era it was one of the most important centres of Buddhist monasticism. As early as the second century B.C., the coins of Eukratides had the Bactrian - Pali, a language cognate with Sanskrit, but written with characters of seemingly Phœnician origin.

On the coins of the Parthian, Sassanian, Kanerki, Bactrian, Persian, Macedonian, Syrian, Indo-Scythic or Buddhist rulers are Greek or Pehlavi inscriptions, several of them in both languages. The coins have been found of upwards of thirty Bactro-Indian rulers whose names were not Grecian, but who used Greek on their coins. They have been described in Prinsep's *Antiquities*, Wilson's *Ariana Antiqua*, and *Bactrian Coins* by Edward Thomas. The larger number are known as the Azes series, and the Kadphises and Turushka series.

The Hindu coins of the Andhra, Rajputana, Cannauj, Indraprastha, and perhaps Magadha or Behar rulers, are subsequent to Alexander's invasion. The earliest forms in use in India and Central Asia were adopted from the Bactrian Greeks about B.C. 200. The oldest extant are the group of the Sahi dynasty, B.C. 180 or 170 to about B.C. 50.

The Arabian khalifs and the governors of Persia on their coins used Pehlavi characters, and subsequently the Kufic. Their coins have been found struck at Balkh, Basra, Darabjird, Herat, Kerman, Khuzistan, Merv, Merv-ul-Rud, Nahr (van) Seistan, and Yezil.

The capital coins of Delhi, from the time of Altamsh (A.D. 1211-1236) to the accession of Muhammad Taghalag (A.D. 1325), were a gold and silver piece of equal weight, approximating to a standard of 175 grains troy (properly 100 rati). These coins appear to have been officially termed respectively Sikka and Filizzat, but both seem eventually to have had the popular name of Tan-khwah. Sikka, a word of Hebrew origin, in India originally appears to have been a die, and applied to the coin struck. At an early date the word gave a name to the Zecca or Cecca, or mint, of the Italian Republics; thence to the Zeccchino or Cecchino which issued therefrom,

and in this shape the word travelled back to the East, where the term Chickeen or Chick survived to our own day, as a comprehensive Anglo-Indian expression for the sum of four rupees. Filizzat means 'metallic.'

The coinage of British India is regulated by Acts ii. and xvii. of 1835 and xii. and xiii. of 1862. Acts xiii. of 1836 and xiii. of 1844 declared that Sicca rupees, and Benares, Farrakhabad, and Trisulee rupees, are not a legal tender. Other Acts are xxxi. of 1837, xxi. of 1838, vi. of 1847, and xi. of 1844.

The silver coins coined and current in British India are the silver rupee of 180 grains, with its portions in half, quarter, and eighth.

By Act xxi. of 1835, the copper coinage consists of a double pice or half anna, weighing 200 grains troy, a quarter anna or pice of 100 grains, a half pice or one-eighth of anna of 50 grains, and a pice, being 1:12 of anna or one-third of a pice, 33½ grains troy. The silver fractions and the copper coins are legal tender for fractions of a rupee. Gold has not been coined in the mints of India since the early part of the 19th century. Till then, the gold mohur, value 16 rupees, and the pagoda or hun, value 3½ rupees, were current.

All the people of the east coast of Africa, Southern India, Siam, and Japan have the cowry shell, *Cypræa moneta*, for small change; and the radical character in the Chinese for silver, money, riches, precious stones, expense, is 'poei,' or shell. Tavernier found pieces of twisted metal wire, called Iari (from the province of Iar, in Persia), current on the Malabar coast; and Thunberg likewise saw them current in Ceylon; and Knox tells of a coin (p. 197) 'like a fish-hook.' These have a resemblance to the Celtic rings of Britain and to the oboloi of the Greeks, which were kabab-skewers, (oboloi) ὀβολοί, a handful of which made a drachma, from δράττειν, to grasp with the hand.

In assay reports from the Bombay mint in 1852 on Panjab coins, the average of 190 old Mohurkee rupees was equal to 90·662 Company's rupees; that of 190 new was 88·792; 190 Gondashai rupees averaged equal to 78·961; 190 Jacobanshai, equal to 94·781; and 190 Nanakshai, equal to 92·037 Company's rupees. 190 old Farrakhabad rupees averaged 98·837, and 190 new, equal to 98·847 Company's rupees. 90 Khyrpur rupees averaged 87·123 Company's rupees, and 98 Nadri rupees 106·558 Company's rupees.

Southern India had a coinage of gold, and a small coinage of silver and copper, under the Hindus prior to the Mahomedan rule, and the maharajas of Travancore still coin in gold.

The Mahomedan silver (rupa) rupee was first struck at Delhi about A.D. 1541, in the time of Sher Shah, but was not made current in the south of India till 1654.

In 1601 the English introduced India money specially struck for India in the London mint. The coins had on them a portcullis. In 1660-61 the English established a mint at Madras. In 1770 there were in Bengal so many sorts of rupees, and rupees intrinsically of the same value differed so much in nominal value, which was regulated by the date of coinage, that no one but a siraf or money-changer could value the current coin, and the Government were forced to establish an ideal standard, called the 'current rupee,' to which all calculations were made.

Most of the Feudatory States of India continue to coin in their own rulers' names, and under an Act of 1872 the coins of Native States of India are admissible as currency, under certain conditions. In the Hyderabad State there are several rupees, the Hali Sicca, and others, all of less weight than the rupee of British India. In Amraoti, the bankers used to pass sealed bags of money. In the Hyderabad State the copper coins in use are shapeless lumps, with some obscure marks on them. In reality these copper coins are the chief part of the currency, the value of the several silver coins being various, and each varying daily in the exchange of the bazar. The reckoning is by four, which is called a ganda.

4 cowries (gavvalu)	= 1 ganda.
14, 16, or 18 ganda	= 1 thoodi or Pisa copper.
4 thoodi or doodi	= 1 ganda of coppers.
16 or 17 copper ganda	= 1 rupee.

Nepal was conquered by the Gurkhas in the Newar year 888, corresponding with A.D. 1768. Prior to this epoch, the valley of Khatmandu was divided into three sovereignties, Patan, Bhatgaon, and Khatmandu, each governed by a raja. Hence, on the Newar coins, three series of rajas' names are found, those of Bhatgaon being generally distinguished by a shell, those of Patan by a triangle, and those of Khatmandu by a sword. The old coins of the Mal or Newar rajas are much valued for their purity, and are worn by the women, strung to necklaces or armlets, as tokens in memory of their ancestors. All money current north of the valley of Nepal, as far as the boundaries of Chinese Tartary, was formerly coined by one or more of the Nepal rajas. This was a source of considerable profit to them, the Bhutia giving them weight for weight in silver and gold-dust; but Ranjit Mal, the last reigning raja of Bhatgaon, sent them such base coins as to occasion a decrease of nearly one-half of their intrinsic value, which was no sooner discovered by the Bhutia than a desertion of the mint took place, and there has been no more Bhutia coinage made in Nepal.

The Nepalese procure all their silver from China, in the form of stamped lumps, as they are current in Lhasa, for the Tibetans generally follow the Chinese custom in their money transactions, of paying and receiving by weight, and the merchants carry scales with them for the purpose. Since the Gurkha conquest, the Vikrama era has superseded that of Newar for ordinary purposes, and the Saka, commonly used in Hindustan, has been introduced upon the Nepalese coins.

A Kashmir rupee was coined in 1849 by the late maharaja Partab Singh, bearing a Christian cross, and the letters 'I.H.S.' These were coined shortly after the annexation of the Panjab, when the maharaja was very anxious to show his loyalty in a way which he supposed likely to be most gratifying to a Christian Government.

Up to the beginning of the 19th century, the trans-Gangetic nations used lumps of silver like the sycee of the Chinese.

In the Straits Settlements the rupee is current, but there and throughout the Archipelago and the sea-coast of China the dollar is largely in use, and the Spanish dollar is the more valuable.

Chinese Currency. — Sycee silver, in Chinese Wan yin, is their only approach to a silver currency. In it the Government taxes and duties, and the salaries of officers, are paid; and

it is also current among merchants in general. The term Sycee is derived from two Chinese words, *Se-sze*, fine floss silk; which expression is synonymous with the signification of the term *Wan*. This silver is formed into ingots (by the Chinese called shoes, and by the natives of India, *khuri*, or hoofs), which are stamped with the mark of the office that issues them, and the date of their issue. The ingots are of various weights, but most commonly of ten taels each.

Sycee silver is divided into several classes, according to its fineness and freedom from alloy. The sole Chinese coin is of bronze, the silver and gold in China being sold by weight. An ounce of silver is the equivalent of from 1700 to 1800 of these bronze coins, which are called 'sapek' by Europeans. They have some pieces of brass, called *tsian*, and in Mongol *teho*, of which the inhabitants of Siberia make *tehok* and *tehek*; they are of less value than a copee. A kind of notes are in circulation among private persons. In China, smooth pieces of metal, which served rather for weights than for currency, date from *Kieng-Wang*, who reigned B.C. 524. But the earliest known piece is attributed to the emperor *Wen-ti*, of the lesser Sung dynasty, A.D. 465.

The *kopang* of the Japanese is simply an oblong plate of gold with the angles rounded off.

In Arabia and the Persian Gulf, the silver real and the copper *falus* are current; but the Indian rupee and the Spanish dollar also pass current. In Arabia, the Spanish or German dollar, worth about 4s. 6d., is the silver coin; but in the exchange with India, 100 dollars range from 212 to 225 rupees. The Indian rupee also passes current everywhere. British gold is becoming well known. The copper piece of India are current, but exchange varies with the supply. Arabia has not any national coinage. According to *Marsden*, it was not until the khalifat of *Abdul Malik*, in the year of the Hijira 76 (A.D. 695), that a distinct coinage was instituted with a view of superseding the currency of Greek or Byzantine and Persian gold and silver.

The *dinar*, under the khalifs, was about equal to 10s. 8d. About A.D. 1440-1450, in *Ibn Batuta's* time, a western *dinar* was to an eastern as 4 to 1; and an eastern *dinar* seems to have been $\frac{1}{8}$ th of a *tankha*, which, even supposing the *tankha* of that day to be equal to a rupee of *Akbar*, would be only 2½d. A *dinar* at *Kābul* in the early part of the 19th century was so small that 200 made one *abassi*, a coin of less value than a shilling.

The *tankha* in *Ala-ud-Din's* time is said to have been equal to 50 *jital* (a copper coin which some said was equal to a *paisa*), and in *Muhammad Taghalaq's* time it was so debased as to be worth not more than 16 *paisa*. The *tankha* appears to be the coin represented by the modern rupee, and perhaps, when at its proper standard, was about the same value.

The rupee of *Akbar* contained 174·5 grains of pure silver, and was divided into 40 *dam* or *paisa* (of 191½ grains of copper each). The *dam* was subdivided into 25 *jital*. *Queen Elizabeth's* shilling contained 88·8 grains of pure silver; so that *Akbar's* rupee was worth 1s. 11½d. of English money of his time. *Akbar's* standard remained almost unaltered all over the *Moghul* dominions, until the breaking up of the empire in the middle of the 18th century. The rupee of India now

contains 176 grains of pure silver, and exchanges for 64 *paisa*, containing 100 grains of copper each. *Akbar* had a four-cornered rupee, called *Char-yari* by the people, this being a term applied to the four immediate successors of *Mahomed*, viz. *Abubakr*, *Umar*, *Usman*, and *Ali*.

The current coin of Persia is the *keran*, a silver coin of which 209 are equal to 100 rupees, or about 11½d. each. The gold *toman* is worth 10 *keran*. 50 copper *guz* are equal to one *keran*.

The coins of *Kadphises*, called *Kadphises Koranos*, to distinguish him from *Kadaphes* (*Kadphises*), the conqueror of *Kābul*, and those of *Kanerki*, his successor, have been found throughout the whole of Upper India; two or three of them have been obtained from *Masulipatam*, and one from *Tanjore*. In the *Manikyala tope*, *General Ventura* found shell money, the *cowry*, the spherical flat ingot, *Indo-Scythian* and *Sassanian* coins, all of which had been deposited at the same time. In another tope, opened by *General Court*, were found Roman *denarii* of *Antony* and *Julius Cæsar*, and coins of some Roman families associated with *Indo-Scythic* pieces of *Kadphises*. In August 1856 there was discovered a pot of very beautiful gold coins of the time of *Augustus* and other emperors, near *Calliempotoor*, in the *Iyempully taluk* of *Madura*.

Symbols.—In the south of India, the figures of animals, the dog, the fish, a serpent or eel, the lion, the bull, the elephant, the ankus or elephant-goad, also weapons, sword, bow and arrow, a mace, *sthamba* or poles, were largely used on old coins as symbols. The dog is crouching on fore legs or plays. The fish was the ensign of the *Pandyan* dynasty, but is also found on *Buddhist* seals. The *chakram* or wheel, the *chaitya*, the *Ficus religiosa* or *pipal* leaf, also a bow and arrow, a hand, and the *swastika* cross.

The old *Mada* and *Tankha* coins are all of gold, and generally cup-shaped, the reverse convex, the obverse concave, with fine impressions in relief, or with a lotus or *padma* and *chank* or shell.

In the ancient coins of India, lead was used for smaller denominations. These have been found of all weights and sizes near *Amaravati*, with a lion or the tree symbol. The lion is the most favourite symbol represented on *Buddhist* sculptures. It forms the crowning ornament of the celebrated *laths* or *obelisks* of Northern India, the most remarkable of which are the *Allahabad column*, those of *Bettiah*, *Bakra*, etc. It occurs prominently amongst the ornaments of ancient and modern *dehgap*, and is a favourite symbol on the ancient coins of *Bactria* and *S. India*.

The elephant appeared conjointly with the lion on the *Buddhist* coins of *Bactria* and *S. India*; but in other *S. Indian* coins the elephant appears on the obverse, with some *Buddhist* symbol on the reverse.

The bull, both in *Buddhist* and *Saiva* mythology, is a favourite symbol with both sects on many of their coins. It was early adopted by the successors of the Greek coins of *Bactria*, and with the extension of the *Saiva* creed in India its symbolic adoption became almost general. The *Indian* coins with it are of lead, copper, and white metal.

The horse was a favourite symbol on *Buddhist* coins of *S. India*, of lead, and copper, and white metal.

The boar type of coins is the best known of all the old coinage of the S. of India. It was originally the badge of the Chalukya families of Kalyan and Rajamundry, from whom it passed to the later Chola dynasty, was subsequently adopted by the Rayar dynasty of Bijanagar, and is still found on the seals of some of the petty local chiefs in the Carnatic.

About 150 coins with symbols have been discovered, 27 of them have flowers (phul), dots, or stars; 14 have varieties of the lotus (padma) or trefoil; 12 have varieties of the trident (trisula) or spear (bala); 10 have flower (phul) or knot (padma phul); 4 with the barch'ha spear, or the guda sceptre or mace; 15 have the jhar or thuhar, tree or sprig; 6 the suraj or sun; 7 shamsiri dagger; 4 the katar dagger; 1 the ankus or goad; 13 with numerals or letters; and 13 with the shell, panja, or hand, the Hindu deities, Hanuman, elephant, the royal umbrella or ch'hata, or the swastika + cross. — *Yule, Cathay*, i. p. cxxlvii.; *Fraser's Journey into Khorasan*, p. 74; *Elph.* pp. 420, 430; *Mr. Walter Elliot in Mad. Jour. Lit. and Sc.*, Jan. to Mar. 1858; *Mr. Edward Thomas' Prinsep's Useful Tables*.

COIR is the fibre from the rind of the cocoanut, and is a corruption either from the Tamil Kayer, a rope, or the Maldivic Kaubar, the name given to the cords with which the inhabitants, according to Abul Fazl, sewed together the planks of their ships. It is largely used in India, and the exports during the years 1850–51 to 1860–61 from India ranged between 2393 and 5832 tons, value £20,909 and £57,284. Between 1868 and 1878, the exports of coir and coir rope ranged up to 10,821 tons. Coir appears in the market in various degrees of fineness, depending on the age at which the cocoanut is cut and the husk separated, and the care bestowed in steeping and cleaning. In order to remove this husk, an iron spike or sharp piece of hard wood is fixed in the ground. The nut is then forced upon the point, which passes through the fibres, and thereby separates the rind from the shell. In this manner a man can clear 1000 nuts daily. For the best coir, the outer rind of the nuts is bruised and steeped in water for two or three days, when it is taken up, and the fibres separated by the fingers and scraped gently with a blunt knife, and dried in the sun. If steeped in water too long, they get dark-coloured. Mr. Robinson thus describes the method of making coir in the Laccadives. The husk, he says, gets hard and woody if the fruit be allowed to become quite ripe, therefore the proper time for cutting it is about the tenth month. If cut before this, the coir is weak; if later, it becomes coarse and hard, and more difficult to twist, and requires to be longer in the soaking-pit, and thus becomes darker in colour. When cut, the husk is severed from the nut and thrown into soaking-pits. These, in some of the islands, are merely holes in the sand, just within the influence of the salt water. Here they lie buried for a year, and are kept down by heaps of stones thrown over them to protect them from the ripple. In others the soaking pits are fresh-water tanks behind the crest of coral. In these the water, not being changed, becomes foul and dark-coloured, which affects the colour of the coir. When thoroughly soaked, the fibrous parts are easily separated from the woody by beating. If taken out of the pits too early, it

is difficult to free the coir from impurities. If left in too long, the fibre is weakened, as is said to be the case also with that soaked in fresh water. The coir from the Laccadive Islands, Kadamat, Kiltan, and Chetlat, is said to be of the best description. In the Laccadives the manufacture into cordage of the coir is entirely in the hands of the women. When soaked sufficiently long, it is taken out of the pit and beaten with a heavy mallet, and rubbed with the hands until all the interstitial cellular substance is separated from the fibrous portion. When quite clean, it is arranged into a loose roving, preparatory to being twisted, which is done between the palms of the hands in a very ingenious way, so as to produce a yarn of two strands at once. In these islands coir is one of the chief commodities of barter for the necessities of life, as rice, salt, tobacco, etc. The coir is made up for their petty traffic in short 'kute' of a mixed length and weight, and at the end of the year these are collected and made up into lengths of 70 to 75 fathoms, as received by the Government. 40 cocoanuts are said to yield 6 lbs. of coir in Ceylon. Mr. Robinson says three large coast Laccadive nuts will yield 1 lb. of coir, measuring 22 fathoms, whereas ten small fine island nuts go to about 1 lb. of coir, but this will measure 35 fathoms. 2 lbs. of such yarn, measuring from 70 to 75 fathoms, are made up into sootie, of which there are 14 to a bundle, averaging about a maund of 28 lbs. A Mangalore candy of 560 lbs. will thus be the produce of 5600 nuts, and should contain about 20,000 fathoms of yarn. The value of the coir produce of a tree is calculated to be from 2 to 2½ annas; and that of the produce of 100 trees, from 14 to 15 rupees. The average value of the total raw produce of a tree bearing fruit would then be 7 annas to ¾ rupee; and that of a plot of 100 trees, 45 rupees. The annual export of coir from the Laccadives to Madras ports is about 200 tons. In Ceylon, at Calpentira and the Akkara-pattoo, the natives separate the coir by burying the husks along the border of the extensive salt-water lake, and when, after six months or more, they are dug out very clean, the fibres easily separate from the cellular tissue of the husk. This mode of preparing the fibre prevents the offensive smell emanated by macerating the husk, so common along the road from Colombo to Matura.

China imports coir from the Archipelago. Coir is made into cordage, both ropes and cables, for boats and ships, for which, from its lightness, it is well suited. It is largely used by upholsterers as a material for stuffing mattresses, couches, pillows; it is used as a substitute for oakum in caulking ships. The fibre is also made into brushes and brooms, as a substitute for bristles; is cleaned, curled, and dyed to resemble horse-hair; and made into matting, door-mats, and netting for sheep-folds, woven into stair carpets and floor-matting, bonnets, hats. — *Lond. Exh. of 1862*; *Royle, Fib. Pl.*; *Robinson's Report on the Laccadives*; *Hon. Mr. Morrison*; *Ondatjee*.

COIX BARBATA. Roxb.

Adavi godhumulu, . TEL. | Golive, Korimidi, . TEL.
Gila gaddi, Goli mid, | Kokilakhamu, . . .

Grows in India. The Coix is a genus of plants belonging to the order Panicaceæ. Several species are known in India,—aquatica, barbata, gigantea, heteroclita, lacrima, pumila; and the following are

Burmese names for undetermined species,—Ka le pouk pouk, Ka le hmen, Ka le shce, Ka le theing, Ben wai thoo.

COIX LACRIMA. *L.* Job's tears, Coix millet. Ka le thee, . . . BURM. | J'yi-jin, . . . CHIN.

The Burmese species of Job's tears has large esculent seeds, which are parched for sale in the bazar. A great deal of coix is cultivated in the Khassya Hills about Moflong; it is of a dull greenish purple, and, though planted in drills and carefully hoed and weeded, is a very ragged crop. The shell of the cultivated sort is soft, and the kernel is sweet; whereas the wild coix is so hard that it cannot be broken by the teeth. Each plant branches two or three times from the base, and from seven to nine plants grow in each square yard of soil; the produce is small, not above thirty or forty fold.—*Hooker*, ii. p. 289; *Mason*; *Williams*.

COJIA, written Khojah, Cojah. See Khajali.

COLABA. In the spacious harbour formed by the islands of Caranja, Colaba, Bombay, Salsette, and the continent, several smaller rocky islands are scattered, bearing different names. Of these are Bombay, Elephanta, and a little island close to the latter that Europeans call Butcher Island, but known to the people as Depideva, Holy Island, the island of the gods. Colaba island in ancient times formed a shelter for the pirate fleets of Western India. In 1662 Sivaji fortified it; in the 18th century Angria made it his stronghold.

Colaba is also a point or spur of rock protecting the entrance to Bombay harbour on the north; it was originally a chain of islets, which have been connected with each other and with the island of Bombay. On its S. and W. are extensive and dangerous reefs of rocks, called the Prongs. It is still the scene of many wrecks.

COLA NUT of the *Cola acuminata*, west tropical Africa. The seeds are much esteemed by the natives for their bitter flavour, and are said to enhance the taste of whatever is eaten after them. It might be largely cultivated in India.

COLAPORE. See Kolapore.

COLAR LAKE, a marine lagoon of great extent, lying between Ellore town and the sea. Several marine lagoons, known in India as backwaters, stretch around both sides of the Peninsula of India; north of Madras are the Ennore and Chilka and Colar lakes, and there are several south of Madras and on the Malabar coast. Several streams flow into the Colar; and one, the Upputeru, is a tidal river. In the hot season, many routes are passable on foot or on horseback, which in the rainy season become part of the lake, and have to be crossed on a palmyra raft. The principal route across the lake is from Ellore to Kykalore. From these two places palmyra rafts ply regularly to convey goods and passengers. The Colar does not extend to Ellore itself, but its edge in the rainy season comes within three or four miles of the town, to which there is a fairly good road. The lake abounds with fish.

COLCHICUM AUTUMNALE. *Linn.*

Sorinjan, . . . ARAB. | Kuljikoon, GR. of ARAB. Meadow saffron, . . . ENG. | Suranjan-talk, . . . PERS.

The colchicum of medicine is the cornus and seeds of *C. autumnale*, and is well described by Dioscorides. It was used by the Arabs, and is their sorinjan; they give kuljikoon as its Greek name. The hermodactyls of the later Greeks and Arabs, and the sweet and bitter sorinjan of the Arabs,

were no doubt species of this genus, perhaps *C. variegatum*, *Planch.*—*O'Sh.*; *Royle*.

COLDENIA PROCUMBENS. *Linn.*

Tripunkhi, . . . HIND. | Hamsa padu, . . . TEL. Siru padi, . . . TAM. | Hama padi, . . . "

A small plant growing in Southern India, used as a poultice fresh, also when dried, in powder with fenugreek seeds, to promote suppuration in boils.—*Roxb.*

COLE, ROBERT, Principal Inspector-General of the Medical Department of the Madras army; he wrote *On the Laterite Formation*, and *Laterite of the Red Hills*, in the *Madras Lit. Soc. J.* iv. 100.

COLE, COLONEL ROBERT, a military officer of the Madras army, eldest son of the above Dr. Robert Cole, author of an elementary grammar of the Coorg language.

COLEBROOKE, HENRY THOMAS, was the first to give a tolerable sketch of the character and contents of the Vedas in 1805; and in 1823–1827 he expounded the principles of the different systems of Hindu philosophy. His father, Sir George Colebrooke, Bart., was for many years chairman of the E. I. Company. Henry Thomas was born in London, 15th June 1765, and died there 10th March 1837, aged 73. He arrived at Madras in 1783, from which he went on to Calcutta, where his elder brother was established. In 1786 he was appointed Assistant Collector in Tirhut. In 1801 he attained to the judicial line as First Judge in the High Court of Appeal, afterwards called the Sudder Diwani and Nizamat Adalat, and in 1807 he became a member of Council. He left India in 1815, at the age of 50. His principal writings were,—

On the Husbandry and Commerce of Bengal, Calcutta 1795;
Hindu Law on Contracts and Successions, Calcutta 1798, and London 1818;
Sanskrit Grammar, Calcutta 1806;
Amara Kosha, a *Sanskrit Lexicon*, Calcutta 1808;
Translation of the Dayabhaga of Jimutavahana and Yajnyavalkya;
Two Treatises on the Hindu Law of Inheritance, Calcutta 1810;
Algebra from the Sanskrit of Brahmagupta and Bhaskara, London 1817.

In the *Asiatic Researches*, between 1795 and 1816, he wrote on the Duties of a Hindu Widow, Enumeration of Indian Classes, Indian Weights and Measures (1798), Religious Ceremonies of the Hindus, on the Sanskrit and Prakrit Languages and their Poetry, on the Vedas, on the Jaina Sect, on the Source of the Ganges, on the Gyal, on Olibanum, on the Dryobalanops camphora, on the Indian and Arabian Divisions of the Zodiac, on the Procession of the Equinoxes.

In the *Transactions of the Royal As. Society*, 1823 to 1828, on the Philosophy of the Hindus, on the Jaina Sect.

He was one of the original founders of the Astronomical Society, and of the Society for the Promotion of Oriental Literature, now known as the Royal Asiatic Society. His *Sanskrit mss.*, which cost him about £10,000, he presented to the E. I. Co. At the time of his death he was a Fellow of the Royal Societies of London and Edinburgh, of the Astronomical, Geological, Linnæan, and Zoological Societies of London, of the Royal Academies of Paris and Munich, and of the Imperial Academy of St. Petersburg.—*Jo. R. As. Soc. v.* 1839; *Ed. Review*, 1872; *Sir J. E.*

Colebrooke's Life of H. T. Colebrooke, Lond. 1872; *Mar Müller's Chips*, pp. 377-417.

COLEBROOKE, LIEUTENANT R. H., wrote on the islands Nankouree and Comarati, *As. Rea* iv. p. 129; *Astronomical Observations in the Andamans*, ib. iv. pp. 317, 385; *Barren Island*, iv. p. 397; *Observations on the Course of the Ganges*, xii. p. 1.

COLEBROOKIA OPPOSITIFOLIA. *Smith*. Pansra, HIND. A large shrub of the Siwalik hills and Salt Range, growing up to 4000 feet; wood used as fuel, also to make gunpowder charcoal; and the leaves as fodder for cattle, and are applied to wounds and bruises. *C. ternifolia*, *Roxb.*, grows in the Peninsula.

COLEHAN, a part of Singbhum occupied by the Ho as their proper country. The Colehan is divided into Pirhi or districts, each under a manki or chief, and each village has its mundah or headman.—*Dalton*, p. 163.

COLEOPTERA. See *Insects*.

COLEROON, the most northern and largest branch of the delta of the Cauvery river. The Coleroon debouches in lat. 11° 25' 20" N., and long. 79° 52' 10" E. Its entrance is marked by a gap in the trees, and by the four porticos of the pagoda of Chellambrum. The Coleroon branch of the Cauvery is separated from the Cauvery below the island of Seringham, near Trichinopoly, and after a course of 80 miles (of which it is the boundary of this district) falls into the sea near Devicottah. An anicut or dam was in the year 1836 constructed across the Coleroon, by which means a large supply of water is turned into the two southern taluks of Mannargoody and Chellambrum, and is of material service to the cultivation. The Coleroon anicuts are said to have been originally formed in the second century of the Christian era.

COLEUS AMBOINICUS. *Lour.*

C. crassifolius, *Benth.* | *Plectranthus aromaticus*,
C. aromaticus, " | *Roxb.*
Pathur chur, . . BENG. | *Karpura valli*, . . TEL.
Country borage is a delightfully fragrant plant of the Moluccas and the Peninsula of India, and grown in gardens. Its leaves are eaten with bread and butter, or bruised and mixed with food, drink, or medicine.—*Voigt*.

COLEUS BARBATUS. *Benth.*

Plectranthus barbatus, *Am.* | *P. asper*, *Spreng.*
P. Forskalii, *Willd.* | *P. monodelphus*, *Roxb.*
P. comosus, *Sims.* | *Ocimum asperum*, *Roth.*

A shrubby plant, with a strong but not disagreeable smell. Cultivated in gardens all over India as greens. The roots are pickled.—*O'Sh.* p. 491.

COLEUS OSMIRRHIZON. *Elliot.*

Hrebera; *Valuka*, *SANSK.* | *Iribeli Kuru-veru*, . TEL.
It grows in Southern India, where it is cultivated in gardens. Hindu women use the scented roots to ornament their hair; and it is used as a drug, and as an offering to idols.

COLEWORT, a variety of cabbage, *Brassica oleracea*, of little value.—*Jaffrey*.

COLLADDI or Kolladdy, a fort on the island of Seringham.

COLLERI, a race occupying the country south of Trichinopoly, until the 19th century, so predatory, that in the south of the Peninsula of India, Colleri became the ordinary designation of a thief; derived from Kallara, thieves, plunderers.

In ancient times they seem to have inhabited the woods from Trichinopoly to Cape Comorin. Orme describes them in the middle of the 18th century as expert thieves and plunderers; and the Jesuit Father Martin says they were very cruel. Pennant, in the 18th century, says 'the adjacent countries are covered with thick forests, and little cultivated by reason of the savage inhabitants, the Polygars and Collieres, who may be truly styled "sylvestres homines." The Collieres, he adds, were predatory, and their government, as also that of the Polygars, feudal. The Collieres are in number thirty or forty thousand. Their country is hilly. They generally sided with Mahomedans and the British in the wars against the French in the times of Clive and Duplex. Their chieftain is the Maharaja of Pudukottah.—*Pennant's Hindostan*; *Orme's Hindostan*.

COLLICHTHYS PAMA. *B. Ham.* The whitening fish.

COLLOCALIA, a genus of birds belonging to the family Cypselidæ. *C. linchi* is the swiftlet that produces the edible birds' nests used in China as a restorative food. The other species is *C. nidifica*. See *Birds' Nests*; *Birds*.

COLOCASIA. *RAY*. A genus of plants of the family Aracæ. Several species grow in the south and east of Asia, viz. *C. antiquorum*, cucullata, esculenta, fornicata, odora, Indica, bicolor, arborescens, montana, mucronata, nymphaefolia, virosa, macrorrhiza of Ceylon, and *C. Himalensis* of the Himalaya, all of them remarkable for containing a milky juice. They are grown in S. Europe, the East and West Indies, and in Polynesia, where the leaves and roots, under the name of yam, coco, eddo, taro, are used as food. Colocasia and its allies are remarkable for the distillation of water from the extremities of their leaves. This process generally takes place at night or in a damp atmosphere, and supplements the evaporation which takes place from the surface of the leaves when the air is dry. Another curious physiological phenomenon, well shown by many Aroids, which have their numerous small flowers enclosed in a sheathing leaf (spathe), is the rise of temperature at the time of flowering in the floral organs, due to chemical changes in their tissues. In these plants the sheathing spathe prevents the dispersion of the heat, so that the temperature inside sometimes rises many degrees above that of the air outside. *C. grandifolia*, the great-leaved Caladium, is the *Alu* of Bombay.

COLOCASIA ANTIQUORUM. *Schott.*

Arum colocasia, *Linn.* | *A. Egyptiacum*, *Rumph.*

There are five varieties of this plant,—

α. Goori kuchoo, BENG. β. Ashoo kuchoo, BENG.
Shema kalengu, . . TAM. | *Chema*, *Chama dumpa*,
Chema, *Chamakura*, TEL. | TEL.

These are cultivated in most parts of India and Burma. Small offshoots from the tubers are, like potatoes, planted in well-manured friable rich soil. The roots of the Goori kuchoo are taken up in about nine months, and those of Ashoo kuchoo after seven months.

γ. Kalo kuchoo. The roots send out numerous runners, but do not swell into tubers like the cultivated varieties. The leaves and petioles are used as greens.

δ. Char kuchoo and

ε. Bun kuchoo are not cultivated, and seldom

COLOCASIA ESCULENTA.

eaten. In Burma, α and β supply the place of potatoes.

Kalkas; Kur, . . . ARAB.	Kaladi, MALAY.
Rab; Alu, BEAS.	Ghuyan; Kachalu, PANJ.
Goori Kuchoo, . . . BENG.	Kuchoo; Kuchwa, SANSK.
Ashoo " " " "	Gahala; Tadala, . SINGH.
Kala, Char " " " "	Habarala, " " " "
Bun " " " " " "	Taro, Koph, of S. SEAS.
Peing, BURM.	Kasaari; Gagli of SUTLER.
Egyptian Arum, . . . ENG.	Sima-Kalangoo, . TAM.
Yam, Eddo, Coco, Cocco, " "	Chamakuru; Chama, TEL.
Arwi, HIND.	

This is cultivated in many parts of India, and up to 6500 feet in the Panjab Himalaya, and to 7600 in Chamba and Kulu. It is a plant of Greece, Asia Minor, Syria, and the East Indies. Two varieties of it are cultivated near Calcutta, the Goori and Ashoo kuchoo; and three varieties, Kala, Char, and Bun kuchoo, are found wild. The small offsets of the Goori and Ashoo are planted about the beginning of the rains in May or June, in a well-laboured friable rich soil. The roots of Ashoo are taken up about the close of the year, and those of Goori in February or March.—*Drs. Voigt, Roxb.; Bombay Products; Stewart.*

COLOCASIA ESCULENTA. Sch.

Arum esculentum, L.	Arisarum esculentum, Rumph.
Calla colyprata, Roxb.	
Arbes; Arbee, . . . ARAB.	Tallas, JAV.
Absen ul Fil, HIND.	Soorun, . . . MAHR.
Yu-tu, CHIN.	Kaladi, MALAY.
Arvi-ki beji, DUKH.	Kuchoo, PERS.
Egyptian ginger, . . . ENG.	Taro, TAHITI.
Racine elementaire, FR.	Sima-kirai, . . . TAM.
Chou de Bresie, TEL.	Gadda kanda, . . . TEL.
Esbare Wurzel, . . . GER.	Bete, TERNATE.
Ghoya, HIND.	Ahan, Coco, Eddo, W. IN.

This species is cultivated in Brazil, the East and West Indies, Burma, the Archipelago, and Polynesia. The root somewhat resembles a pineapple, but is globular. It is rather coarse; but the natives of India make use of the tubers in curries, etc. This seems to be the plant so largely used in the West Indies and Polynesia, under the names coco, eddo, and taro. It is a valuable root, shaped somewhat like a yam, and when well boiled and afterwards roasted, is not inferior to a yam in taste. It is a common food of the inhabitants of Travancore, where there is a superior variety of it, with broad, purple-coloured leaves. The Warriah (Oorah?) in the Ganjam Circars call it Cutchoo; the Malays of the Eastern islands hold it in high estimation. Niebuhr says it is produced in abundance in marshy situations in Arabia, as well as in Egypt. Rumphius says: 'Nutrimentum est catholicum in orientalibus hisce insulis et tanquam utilissima regionis censetur planta eodem modo, quo ab antiquis jam fuit temporibus in Egypto, licet ibi haberetur cibus rusticorum, ac forte per saracenos ejus usus innotuit. Occidentalibus Africæ et Europæ partibus, ita ut haud inepte Æthiopum panis vocari posset.'—*Ainslie; Voigt; Jaffrey.*

COLOCASIA INDICA. Roxb.

Arum Indicum, Lour., Roxb., W. Ic.

Man kuchu, . . . BENG.	Tota calir akkias, . TEL.
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This is cultivated in India, E. Australia, and S. Sea Islands, where its esculent stems and pendulous tubers are eaten by all classes.—*Voigt; Irvine.*

COLOCASIA MACRORRHIZA, Schott, in the Fiji Islands is called ndalo or taro. There is a water and a land variety, the former of which is the more usually grown. The average weight of

COLOPHONIA.

the roots is 2 lbs., and the crops are raised from November to April. It requires irrigation. The young stalks and leaves are used like spinach, or in soup. The root is employed for making the mindrai or native bread. It contains much starch.

COLOCASIA NYMPHÆÆFOLIA. Royle.

Arum nymphaeifolium, Roxb.	Caladium nymphaeifolium, Roxb.
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Sar kuchu, . . . BENG.	Chara kanda, . . TEL.
Welli ela, . . . MALAKA.	

This grows in moist parts of Southern India, Bengal, and the Konkans, and is said to be used as food in Malabar.—*Voigt.*

COLOCYNTH, Citrullus colocynthis, Schr.

Khanzil, ARAB.	Colocynthis, . . . LAT.
Makhal, BENG.	Peponum pulpa ex-siccata, " "
Bitter appelen, . . . DUT.	Cishala indrararuni, " "
Dahak, EGYPT.	SANSK.
Bitter apple, . . . ENG.	Titta commodoo, . . SINGH.
Bitter cucumber,	Coloquintidas, . . . SP.
Coloquinte, FR.	Peycoomuti kai, . . TAM.
Koloquinten, . . . GER.	Varricoomuti-kai, " "
Indrayun, HIND.	Pootsa-kai, . . . TEL.
Coloquintida, . . . IT.	

Colocynth, the Khanzil of the Arabs, has been used in medicine from the earliest times, and is one of the plants supposed to be the pakyoth or wild gourd of Scripture. It grows on the sandy lands of the Dekhan, Gujerat, Kaira, Delhi. Dr. Burn states that two kinds of colocynth occur in Gujerat, the Cucumis colocynthis, and the C. pseudo-colocynthis. The colocynth of commerce is the dried fruit, peeled and unpeeled, and is brought from the Levant, north of Africa, and south of Spain. Colocynth is useful for protecting shawls and feathers against insects. The colocynth used in medicine as a hydrogogue cathartic is an extract from the fruit. That known in India by the Arabic names Indrayun and Bislumba, is said to be obtained from the Citrullus pseudo-colocynthis of Royle. Colocynth oil is prepared in India from colocynth seeds.—*Him. Bot.; Royle, Mat. Med.; Spry.*

COLOMBO, the seat of government in Ceylon, has a population of about 40,000. It is on the west coast of the island, in lat. 6° 56' N., long. 79° 58' E., and exports largely to Europe. Colombo is mentioned in Singhalese historical annals so early as A.D. 496; the name is said to signify a seaport. But this and Covelong, south of Madras, and Quilon of the western coast, are all the same name, 'Kulam.' It was visited by the Portuguese A.D. 1505, and occupied by them in 1638; but they were expelled by the Dutch in 1656, who in turn surrendered it to the British on the 16th February 1796.

COLOMBO ROOT.

Colombo wortel, . . . DUT.	Rais de Calumba, . . PORT.
Racine de Colombo, FR.	Kalambu khu, . . SINGH.
Kolumba wurzel, . . GER.	Rais de Colombo, . . SP.
Kalumb-ki-jar, GUJ., HIND.	Columbu ver, . . TAM.
Radice di Colombo, . . IT.	Columbu veru, . . TEL.
Kalumb of MOZAMBIQUE.	

The colombo plant is the *Cocculus palmatus*. It grows wild on the coast of Mozambique, and at Oriso in East Africa, and is much cultivated in the Mauritius. The root is imported into Bombay for re-export to Europe, and is much esteemed in medicine for its powerful antiseptic, tonic, and astringent properties.—*McCulloch; Voigt.*

COLOPHONIA is in French, Bois de Colophane. To this genus De Candolle refers the tree produc-

ing the Bois de Colophane of the island of Mauritius, and calls it *C. Mauritiann*.

COLOSSOCHELYS ATLAS, a huge fossil land tortoise, discovered by Dr. Falconer and Sir Proby Cautley in 1835 in the tertiary strata of the Siwalik Hills, skirting the southern foot of the great Himalayan chain. They were found associated with the remains of four extinct species of mastodon and elephant, species of rhinoceros, hippopotamus, horse, anoplotherium, camel, giraffe, sivatherium, and a vast number of other mammalia, including four or five species of quadrumana; also a great number of reptilian forms, such as crocodiles and land and fresh-water tortoises. Some of the crocodiles belong to extinct species, but others appear to be absolutely identical with species now living in the rivers of India, in particular, to the *Crocodylus longirostris*, between the existing forms of which, and heads dug out of the Siwalik Hills, no difference is detected. The same result applies to the existing *Emys tectum*, a common species in all parts of India. A very perfect fossil specimen, presenting the greater part of the evidence of the dermal scutes, is undistinguishable from the living forms, not varying more from these than they do among each other. Prof. Thomas Bell considers that there are no characters shown by the fossil, to justify its separation from the living, *Emys tectum*, now a common species found in all parts of India. There are therefore fair grounds for entertaining the belief as probable, that the Colossochelys atlas may have lived down to an early period of the human epoch, and become extinct since,—1st, from the fact that other Chelonian species and crocodiles, contemporaries of the Colossochelys in the Siwalik fauna, have survived; 2d, from the indications of mythology in regard to a gigantic species of tortoise in India. One in the British Museum is 14 feet in transverse circumference, and is 9 feet long.—*Jour. As. Soc. Ben.* No. 247 of 1855. See Tortoise.

COLOUR.

Colours.	FR.	Colours.	FR.
Forbes.	GER.	Colours.	SR.
Boag.	HIND.	Colours.	PERS.

White is the mourning colour of the Mahomedans of Persia and in India, and of the Hindus, Parsees, and Chinese. Blue with Hindus is an unlucky colour. No one will buy a ruby or garnet with a bluish tinge. But the celestial blue is the imperial colour of the Mongols and Chinese. The colour affected by Hindu, and in Burma by Buddhist, religious mendicants, is a dull orange. In the ceremonies of marriages of Hindus, and on other similar happy occasions, red-coloured clothes must be worn, and the invitation cards must be red-coloured.

Sir George Birdwood tells us that of all artistic powers, that of colour, in its highest harmonics, is the most difficult to teach. Though general principles can be imparted by scientific rules, the power of colouring beautifully is undoubtedly one rarely attained. It seems to prevail in races as a special gift. It exists where the knowledge of form is unknown. It accompanies an unconscious sympathy with nature. Many actually savage nations colour their cloths or wraps or mats harmoniously, though absolutely devoid of social or mental cultivation. Europe may cultivate the study of colour, and understand its laws; but in textiles of all kinds, from carpets to

gossamer muslins, and gold and silver tissues, the traditional taste of oriental nations remains unattainable by Europeans. In their silk and woollen fabrics, their metal work and other manufactures, there is an inherent feeling for, and power of producing harmony in, the distribution of colour, and in surface decoration. He tells us that in the colouring of carpets of India, full Indian red, broken by flowers or conventional leaves, in which orange predominates, forms a leading feature. A cool, low blue, a green of similar gravity of hue, and soft creamy white, complete the palette of the Indian designers of these fabrics. European purchasers have introduced changes into these oriental designs, but only to occasion losses of the exquisite harmony of the native arrangements of form and colour. Oriental colouring in textile fabrics seems to result from a gift to the various races that produce them. The native designers proceed in accordance with immemorial traditions, and with a certainty that resembles instinct. Their shawls are the finest textures, if not the most artistic products, of the loom. As studies of colour, the shawls of India have no rivals in the range of textile fabrics. The most celebrated of these productions are produced in Kashmir from the finest wool. The fineness and softness of its fibre retain colours of the most intense and delicate hue. Lakes, yellows, blues, orange, greens of several tints, rich and vivid; white, soft and low of tone, and absolute black, enable the designers to make up endless combinations. The designs in all Kashmir shawls are very similar to each other, with a cone or an occasional peacock amongst the rolling curves, and with the borders of the brightest colours. India also, though not manufacturing shawls, produces woven tissues, some embroidered, and some the work of the loom only, of a splendour unknown to European weavers. The gold and white, gold and purple, white and silver muslins, for colour, taste, and delicacy of arrangement, are amongst the artistic triumphs of the Indian loom. Some of them are of a gossamer transparency, intended for ladies' dresses.

Colour-sticks for the lacquer-ware of India are used in the Panjab by the kharati or wood-turner, to colour his ware when the turning process is complete. The stick consists of shell-lac, melted down with a certain proportion of wax and sulphur, and coloured by various simple or compound colours. They are applied by the hand. The operator holds the colour-stick against the turned wood object while revolving rapidly; the heat produced by the friction melts the lac, and the colour is deposited on the surface of the wood. The skill and fancy of the operator directs him either in laying on a uniform layer of colour, or else putting it on in little spots or touches, by allowing the colour-stick only very lightly to touch the revolving wood, thus producing either a smooth uniform colour, or the pretty mottled appearance so often observed in lacquered ware. Two or three different colour-sticks are often applied, giving the whole a marbled appearance of great beauty. The colour thus applied is spread, fined, and polished, by pressing the edge against the turned object while revolving. The final polish is given by a rag with a little oil. The principal colours are of lac, crimson, orpiment, red lead,

green made of orpiment and Prussian blue, dark blue, indigo or Prussian, black, white, brown or gold colour, light-blue or ultramarine.

Colours for enamels.—Vitroous masses are employed by the minakar, or enameller on silver, etc. The colours are principally green and blue, salts of iron and copper diffused through vitreous matter; a yellowish colour also is produced by litharge. The manufacture consists in taking a silver or metal vase, having the pattern of leaves or flowers worked on it in relief, and filling the hollows with enamel in a melted state. The colours used are blue, green, and red. The art of making this material is known in Lahore, Multan, and other places.

Chinese red colour is made from Taow-fau, or copperas. Their mode of preparation is by putting a pound of copperas into a crucible, over which another crucible is luted, having a small hole in it, which is lightly covered over; around these they pile charcoal, and enclose the whole within bricks, when they fire the charcoal, and as soon as the fumes issuing from the aperture in the crucible become of a light colour, a small quantity of the copperas is taken therefrom, laid upon fir-wood, and moistened with water; if the colour then prove to be a bright red, they remove the fire; if not, they allow the copperas to remain subjected to the heat until it assumes that colour, and then remove the fire. When the crucibles are cool, a cake is found in the lower one, but the finest colour is encrusted on its sides and on the bottom of the upper crucible, which is kept separate from the cake; the pound of copperas produces about four ounces of colour.

Chinese white colour is made from calcined translucent flint, to an ounce of the powder of which they add an equal quantity of white lead.

Chinese green is beautiful. It is prepared with one part of powdered calcined flint, two parts of white lead, and six parts of the scales of well-hammered copper.

Chinese violet is produced by adding an additional quantity of the prepared white to the green.

Chinese yellow is made by combining equal portions of prepared white and red.

Liu is the powder blue of Chinese commerce. It is the Pien-tsing stone, an azure mineral, probably arseniuret of cobalt, roasted and powdered.

All these various colours are used by the china-ware painters, having been previously dissolved in gum-water, to which they occasionally add salt-petre, copperas, or white lead. The colours are laid on after the first baking and varnishing of the china-ware, but the beauty and depth of the colouring is imperceptible until after the second baking.

Black china-ware, the Ow-mi-cw, ornamented with gold, is very much prized in China. To make it, they mix three ounces of azure and seven of the oil of stones; this is laid on the ware, and when perfectly dry it is baked, after which the gold is laid on, and the vessel is re-baked.

Cracked porcelain, the To-wi-ki, is a porcelain prepared simply by varnishing the vessels with a whitish ash-coloured varnish, made from calcined translucent white pebbles; this has the property of marbling and veining the ware, and giving it an appearance as if it had been fractured into many pieces, which had been carefully reunited.

—Smith, M. M. C.; Jameson's Journal, 1853;

Williams' Middle Kingdom; Powell's Handbook; Sirr's Chinese; Madras Ex. Jur. Rep.

COLQUHOUN. In 1882, Messrs. Colquhoun and Wahab crossed China from Canton to Burma. Mr. Wahab subsequently died. They found the river Canton navigable by light-draught steamers for 400 miles to the upper portion of the gorges and rapids; and numerous fine cities in Yun-nan, now fast decaying, owing to the Mahomedan rebellion driving the traffic to the Yang-tze river. The Yun-nan country is a mountainous plateau about 6000 feet high, with ranges of 15,000 feet in the north, falling to 9000 in the south. Its scenery, climate, peoples, languages, and costumes change rapidly. Numerous fine cities attest the former prosperity of the population. Opium, minerals, and tea are the main exports; the imports were cotton from Laos and Bharno, English salt and piece-goods from the latter place, and large caravans from Tibet, conveying tea. The portion of Yun-nan west of Tali had been a stronghold of Mahomedanism before and during the late rebellion. Traces of its rule were found in these places, in the greatly superior architecture, and especially in the decoration of the buildings, both private and sacred. A considerable portion of the population of the plain, sparse as it is, is still Mahomedan, and the doctrines of Islam are taught in some of the schools of Mong-hoa. The aborigines in this region, dwelling chiefly in the hills and hill-valleys, are mostly Lo-lo in the northern portion, while Han-jen prevail in the south; although Lo-lo, Ka-tu, Oni or Hami, and Pai are plentiful, among whom a few Kut-sung and Pa-tu are found. To the south and south-west of Tali the Lo-lo are most numerous, while round the Tali lake the Min-chia tribe (literally, native family) is alone found. The Lis-sou, a division of the Lo-lo, are to be met with to the N.W. of Tali. I-jen and I-chia are names applied by the Chinese and others to the Lo-lo. They mean 'savage people' and 'savage family,' which is also the complimentary term in use by the Chinese for Europeans. Mr. Colquhoun met with Lo-lo,—often black and white tribes,—Tou-lao, Poula, Lung-jen, You-jen, Miao (black and white), and Pai, as well as others of less importance. I-bang is a Laos district tributary to China, situated seven stages south-east of Ssu-mao, and supplies most of the so-called Puerh tea. At Talifu the aboriginal people met with were hospitable, pleasant, and kind. The explorers left Tali at the end of May, pursued their way to Bharno by the route followed by Margary, M'Carthy, Gill, and lastly by Soltau and Stevenson. Yung-chang, the Vochan of Marco Polo, and the westernmost prefectural city of China, was reached on the 7th of June 1882.

COLTS are taken in tribute by several Eastern races, and in the ancient Persian empire the tribute of the distant satrapies was of this kind. Armenia, according to Herodotus, alone gave an annual tribute of twenty thousand colts. Up to a recent date, the princes of Amber received as tribute all the colts reared on one of their estates. Many of the Persian horses which were brought to India up to the middle of the 19th century, were supposed to be tribute horses.—*Tod's Rajasthan*, ii. p. 390.

COLTSFOOT. Kwan-tung-hwa, CHIN. In China two varieties occur, one with large flowers,

which, as also the leaves, are smoked in lieu of tobacco.—*Smith*.

COLUBRIDÆ, a family of snakes, the last of the sub-order Colubrina of Dr. J. E. Gray. The Colubrina include the families Hydridæ, Boidæ, and Colubridæ. See Reptiles.

COLUBRINA ASIATICA. *R. Brown*.

Ceanothus Asiaticus, *Linna.* | *C. capsularis*, *Forst.*

The Asiatic red-wood is a large shrub with pale greenish flowers, belonging to the natural order Rhamnaceæ. Other two shrubs of this genus are *C. Nepalensis* of Nepal and *C. macrophylla* of Martaban.—*R. Brown; Voigt*.

COLUMBA, a genus of birds belonging to the family Columbidae and order Gemitores. *C. intermedia*, *C. rupestris*, *C. leucanota*, occur in India, *C. aromatica*, *C. coronata*, and *C. carpophaga* have been referred to other genera. The most common in India is the—

Columba intermedia, the blue pigeon or pagoda pigeon.

C. livia, *var., Blyth*.

Kabutar, . . . HIND. | Kovil pora, . . . TAM.
Parivi, . . . MAHR. | Gudi purai, . . . TEL.

They congregate in large numbers, and breed wherever they can find suitable spots, on pagodas, mosques, and tombs. The Indian blue pigeon differs from the *C. livia* of Europe, North Asia to Japan, and N. Africa, only in having an ash-coloured instead of a pure white rump. The *C. livia* of Europe, or rock-pigeon, with its subspecies, is the parent form of all domesticated pigeons. Of these there are at least 150 varieties, in four groups.

The first group consisting of the German, Dutch, and English pouters.

A second group includes the Kali-par, Murassa, Bussora, dragon, and English carrier; the Bagadot hen, Scanderon pigeon, cygne rients, the Tronfo, and the Bank.

The third group includes the Java and English fantail; the Turbit and African owl; the Persian Lotan; common and short-faced tumblers; the Indian frill-back and jacobin.

The fourth group includes the dovecot pigeon, swallow, spot, nun, English frill-back, laughter, and trumpeter.

Dr. Jerdon thus arranges the Gemitores or pigeons, syn. Columbæ, *Latham*:—

Fam. Treronide.

Sub-fam. Green pigeons; genera, Treron, Crocopus, Osmotreron, Sphenocercus.

Sub-fam. Carpophaginae, fruit pigeons; genus, Carpophaga.

Fam. Columbidae.

Sub-fam. Palumbinae, wood pigeons; genera, Alacomus, Palumbus, Palumbona, Columba.

Sub-fam. Macropyginae, Cuckoo doves; genus, Macropygia.

Sub-fam. Turturinae, turtle-doves; genus, Turtur.

Sub-fam. Gouridae, ground doves.

Sub-fam. Phapinae, ground doves; genus, Calophaps Indicus.

Pigeons, doves, and turtles are abundant in Southern Asia and the Indian Archipelago.—*Jerdon; Blyth; Darwin*.

COLUMBUS. Christopher Columbus, a Genoese, and famous navigator, with a fleet fitted out by the king of Spain, discovered America on the 12th October 1492. America had been discovered A.D. 986 by Bjarni Herjulfson; and in A.D. 994 Leif Erikson afterwards reached its shores, somewhere between Boston and New York. But the

memory of these discoveries had passed away; and on Friday, August 2, 1492, Columbus set sail from Palos, steering to the west, to reach, in his belief, the East Indies. It was chiefly by the aid of the Pinzon family, a seafaring Spanish house, that he was able to get up the expedition. At midnight of the 11th October, a sailor descried the island, on which Columbus landed at day-break of the 12th, and named it San Salvador. It is now called Watling Island. He had carried with him a letter to the khan of Tartary from the king of Spain, and he died in the belief that he had reached the eastern shores of Asia, and hence gave it the name of 'West Indies.' By an ordonnance of 4th May 1493, the Pope confirmed the king of Spain in the sovereignty of America, and strictly prohibited all persons to touch at any port within a line drawn from pole to pole 100 leagues westward of the Azores; and the Portuguese were to possess all eastward of this line. But when Magellan, sailing westward as a servant of the king of Spain, discovered the Philippine Islands in 1521, the Pope's demarcation was rendered useless, and Spain and Portugal came into collision.

COLVILLE, W. H., author of Notes on the Geology and Botany of the Coast between Bandar Abbas and Jaslik; do. between Shiraz and Bushahr; do., island of Kishm; do. around the head of the Persian Gulf, in 1863.

COLYMBIDÆ, a family of swimming birds, now classed with the Natatores as Podicipidae. The species of Podiceps are called Grebes. They haunt the sea as well as the rivers, are excellent swimmers, and dive frequently. They feed on small fishes, frogs, crustaceans, and insects; and their nests, formed of a large quantity of grass, etc., are generally placed among reeds and carices, and rise and fall with the water.

COLZA OIL, oils of *Brassica campestris* and *B. oleifera*.

COMALA or Kamala. HIND. The lotus; pronounced Kawal. Aran-kawal, the lotus of the desert, from Aranya (Sanskrit), a waste, and Comala, lotus. By the spelling it should be called Arancomala, but the pronunciation is as above.

COMANES, a city mentioned by Ptolemy, supposed to be Nagara, near Cambay, now in ruins.

COMANI, a branch of the Kathi tribe of Saurashtra, whose pallia, or funeral monumental pillars, are seen in groups at every town and village. Abul Ghazi describes a famous tribe in Kharazm, the ancient Chorasmia, called Comani, the remains of which were expelled by Chengiz Khan; and the royal author adds, 'Urgens was not always the capital; and Abulfada tells us Cath, also spelt Kaht, in lat. 41° 45' N., was formerly the metropolis.'—*Rajasthan*, i. p. 59.

COMARASAMY, a hill south of Ramanmalai hill, 30 miles west of Bellary, overlooking the valley of Sundur, used as a sanatorium.

COMARI, mentioned in the Periplus, is Cape Comorin. See Kumari.

COMATESWARA, a colossal Jain figure, known by this name, stands in front of a temple at Sravana Belgola; another colossal Jaina statue is at Karkala in S. Canara.

COMATULE, the feather stars of naturalists, found in the Eastern seas.—*Coll*.

COMBACONUM, in Tanjore, 175 miles S. from Madras, a large, populous town. In ancient times the Chola kings were settled in Tanjore and Com-

baconum, in and near the Cauvery and Colerun rivers, and, as some suppose, gave their name to the Coromandel coast. This town is built close to the river Cauvery. It has 12 pagodas, and in Hindu estimation is a very sacred place, celebrated for its learning. Brick remains of the palace of the Chola are found near Combaconum.

COMBERMERE. Stapleton Cotton, afterwards Lord Combermere, accompanied his regiment, the 6th Dragoon Guards, to Flanders in 1793. From the conquest of the Cape he proceeded to India, and he was in command of the 15th Light Dragoons in the year 1796, and was present at Mallavelly and Seringapatam. Returning as a colonel after ten years' service, he married the eldest daughter of the third Duke of Newcastle in 1801; and was at the head of his brigade of the 14th and 16th Light Dragoons at Oporto and Talavera. In 1809 Sir Stapleton Cotton was created locally a Lieutenant-General, and placed at the head of the whole allied cavalry. He was in the retreat from Almeida, and subsequently at Busaco, Fuentes d'Onor, Salamanca, El Bodon, the Pyrenees, Orthes, and at the battle of Toulouse. For his services in the Peninsula he was created a peer, and received the thanks of the British Parliament. In 1814 he married a second time, Miss Greville. Lord Combermero went to the West Indies as Governor of Barbadoes in 1817, and as Commander-in-chief of the forces in the islands at the end of the American war. He served in India as Commander-in-chief; and in 1825-26 he stormed and took Bhurtpur.

COMBOY. SINGH. A waist-cloth resembling a petticoat, worn by the Singhalese.

COMBRETACEÆ. *R. Br.* The myrabolan tribe of plants, consisting of trees or shrubs, simple or climbing, of 22 genera, and about 140 species in Madagascar, Bourbon, Mauritius, the Society Islands, China, and 64 in the East Indies, viz. 23 Terminalia, 25 Combretum, 2 Poivreia, 2 Getonia, 2 Quisqualis, 4 Anogeissus, 2 Lumnitzera. The various species of Terminalia yield several valuable economic products; the Anogeissus and Lumnitzera useful woods, and Quisqualis fruits excellent vermifuge. Terminalia bellerica gives a good serviceable wood where elasticity and strength are required. The withes of two species of the Combretum are extensively employed in the place of iron stretchers for the mouths of the leathern buckets used in drawing water from wells. Combretum ovalifolium, rotundifolium, costatum, acuminatum, Chinense, and extensum occur in India.—*Mason; Voigt; Roxb.*

COMBS.

Kammen,	DUT.	Sisir, Garu, . . .	MALAY.
Peignes,	FR.	Pentes,	PORT.
Kamme,	GER.	Grebni,	RUS.
Kunghi,	HIND.	Peines,	SP.
Peltini,	IT.	Shipu,	TAM.
Pectines,	LAT.	Duvenna,	TEL.

Combs for cleaning and adjusting the hair are formed of horn, bone, tortoiseshell, wood, etc. In Ceylon, the marginal pieces of tortoiseshell are also used at Point de Galle in the manufacture of bracelets; and necklaces, formed of a chain of shell resembling amber in appearance, bear a higher price than such as are formed of the darker shell. In Ceylon, tortoiseshell combs are worn by men as well as women. In the numerous excesses into which European costume has been

carried, the size of the back comb worn by ladies has never attained that of the Singhalese men, who also wear a narrow, long, bent comb across the fore part of the head. Five pounds even is a moderate price for a tortoiseshell back comb, which increases in value according to the size and quality of the shell. Hair-pins of tortoiseshell are worn by the women, gold and silver being substituted for full dress. These hair-pins are among the articles purchased by passengers. A comb is always part of the belongings of the darvesh of Central Asia.—*Faulkner; Rohde, MS.; McCulloch.*

COMILLAH, the chief civil station of Tiperah.

COMMANDMENTS of the southern Buddhists are ten in number. Amongst them,—Kill not, Steal not, Commit not adultery, Lie not, Take nothing that intoxicates.

COMMELYNACEÆ, the spider-wort tribe of plants, comprising the genera Ancilema, Campelia, Commelina, Cyanotis, Murdannia, Pollia, and Tradescantia. Wight describes Commelina Bengalensis, cristata, nana, papilionacea, polyspatha, and scapillora. *C. cespitosa* occurs in Burma; and Dr. Honigberger received *C. nudiflora* from the Himalayas under the name of Kandoolee. The rhizomes of some species are starchy, and are eaten. *C. Rumphii* is used in India as an emmenagogue.—*W. Lc.; Riddell.*

COMMELINA BENGALENSIS. *Morrison.*

Ho-tan-tu, CHIN. | Kan churu, kauraka, HD.
Has small blue flowers.—*Smith.*

COMMELINA COMMUNIS. *Linn.*

Calf grass,	ENG.	Venna-devi kurn, . .	TEL.
Vatsa priam,	SANSK.	Niru kassuru, . . .	"
Kanang kirai,	TAM.	Venna mudra, . . .	"
Kunnu katti pillu, . .	"	Venna vedara, . . .	"

Its succulent leaves are used by the Hindus for feeding young calves when they wish to wean them from their milk. The plant has a small delicate blue flower, and is found growing on the banks of watercourses, along which it spreads rapidly, sending suckers into the ground. Found in lawns. The leaves are used by the natives mixed with other greens.—*Ainslie; Jaffrey.*

COMMELINA MEDICA. *Smith?* The Ts'ung-tung of the Chinese. Its tubers are used as a cooling medicine. The same name is given to the roots of the Ophiopogon Japonicus, and of a species of Ancilema.—*Smith.*

COMMELINA OBLIQUA. —? Is the Xanjura and Kana of Hindustan. The root of this plant is edible.

COMMELINA POLYGAMA. *Smith.*

Yah-chih-ta'au, . . CHIN. | Chuh-yeh-ta'ai, . CHIN.

The duck's foot grass or spider-wort. In China is much cultivated as a pot herb, which is eaten in spring. The juice of the flower is used as a bluish pigment in painting upon transparencies.—*Smith.*

COMMERCE. From the earliest historic times, products from the S.E. of Asia have been carried to the west by the same sea routes as are now followed, or have been, as now, carried across the deserts of Central Asia and through the passes in its mountain ranges.

The earliest route between Europe and India of which there is any record in the works of Herodotus, Strabo, Pliny, and others, was by the Red Sea. Even before the building of Troy, spices, drugs, and many other kinds of merchandise were

sent from the East by this route. The ships coming from the Indian seas landed their cargoes at Arsinoe (Suez), from whence they were carried by caravans to Cassou, a city on the coast of the Mediterranean. The distance from Arsinoe to Cassou was about 105 miles. According to Strabo, this route was twice altered in search of a more commodious one. Sesostris of Egypt started the idea to which M. de Lesseps in the Christian year of 1869 gave effect. The Egyptian monarch caused a canal to be cut from the Red Sea to a branch of the Nile, and had ships built for carrying the traffic, but for some reason the enterprise did not succeed. In 1 Kings ix. 26, also, it is mentioned that about 1000 B.C., Solomon king of Israel 'made a navy of ships in Ezion-geber, which is beside Eloth, on the shore of the Red Sea, in the land of Edom.' And these ships brought gold, silver, and precious stones from Ophir and Tarshish in such quantities, that king Solomon 'exceeded all the kings of the earth for riches.' Silver was so plentiful at his court, that it was 'accounted nothing of.' The king's drinking-cups were made of pure gold, and his shields were covered with beaten gold. We are distinctly told that the navy of Tarshish brought 'gold and silver, ivory and apes and peacocks,' and Ophir has been supposed to have been some district or port in India. The Tarshish fleet is said to have arrived at Ezion-geber only once every three years, from which we may infer that the voyage was a considerable one, or that the ships had to go with the S.W. monsoon and return with the N.E. winds, or made a trafficking voyage from one place to another, until the one cargo was sold and another shipped. Neither place has been identified. Had the ships visited the Malay Peninsula, Sumatra, Java, or Borneo, they would have known of the *Simia satyrus* (the orang-utan of Malacca and Sumatra, the *mia* of Borneo), or seen the *Siamanga syndactyla*, the long arms of which measure five feet six inches across in an adult about three feet high. As at the present day, the ancient mariners boldly crossed the Arabian Sea, and reached Muziris, a port on the Malabar coast of India, in a voyage of forty days, or about the middle of September, and they left India on their return at the end of December. The races ruling in Mesopotamia, on the shores of the Persian Gulf, the Akkad and the Phœnicians, also prosecuted the Eastern trade.

The *land routes* have varied with the revolutions that have raised and swept away the military rulers. They have, at times, led through the deserts of Africa, have crossed the immense steppes of High Asia, and over the passes in its mountain ranges, and, as at the present day, caravans of camels, with their bales and chests bound with cords, as described in Ezekiel, trailed their long lengths along. Pliny (lib. vi. c. 4) particularly describes one route. 'Having arrived at Bactra,' he observes, 'the merchandise then descends the Icarus as far as the Oxus, and thence are carried down to the Caspian. They then cross that sea to the mouth of the Cyrus (the Kur), where they ascend that river, and, on going on shore, are transported by land for five days to the banks of the Phasis (Rion), where they once more embark, and are conveyed down to the Euxine.'

In the days of Augustus, Aulus Gellius described the caravans of Arabia as being like armies in magnitude. The time and course of each

caravan was marked by the convenience of merchants and the position of watering-places. Each had its fixed time of starting, its invariable daily halting-places, its entrepôts, and its points of junction with other caravans who would join it for protection.

At one time two great lines of caravans started from Yemen. The one proceeded from Hadramaut by Oman, and took the line of the Persian Gulf; the other came by the Hejaz along the coast of the Red Sea, and arrived at Petra, and from hence bifurcated off into two roads, the one going to Gaza and the other to Damascus. From Yemen to Petra the time of the caravan march was seventy days; and the stations of the present day are the same as those described by Athenodorus, and were probably the same in the days of Iahmael and Abraham. The Maadite tribes found in this traffic an immense field of employment. Some let their camels for hire, some acted as guides, some secured protection in return for payments of money, some engaged themselves in traffic. Some revolution interrupted this caravan trade; the vast cities which maintained their enormous prosperity by the passage of caravans fell into decay; but remains of colonnades, temples, and amphitheatres excite the traveller's admiration and surprise, amid the sands of the Hauran and the deserts east of the Dead Sea and the Lake of Tiberias. Palmyra, Philadelphia, and the cities of the Decapolis were the northern stations or termini of the great caravan road from Petra to Damascus. But the position of Petra was peculiarly adapted to advance it to that incredible degree of opulence which won the admiration of visitors in the days of Greece and Rome, which was described by Athenodorus the Stoic, and which, after having been forgotten in the desert for centuries, still exists, within its rock ramparts and its richly chiselled and stately pillars and edifices, to astonish and instruct the modern traveller. Petra, in fact, was one of the chief points of junction of the great caravan traffic, and it was here that the cargo of the caravan changed hands from the carriers of the southern to those of the northern merchants.

With the fall of the mighty Roman empire, the routes by the Red Sea and Arabia seem to have been abandoned; and centuries afterwards, when the Genoese engaged in commerce and navigation, a former trade route had been reopened up between India and Europe. The merchandise from the western part of India was now carried up the river Indus as far as it was navigable, and then across country, through Samarcand, to the river Oxus, down which it was shipped to the Caspian Sea. In like manner the merchandise from China and the Moluccas was shipped across the Bay of Bengal, and up the rivers Ganges and Jumna, and then carried overland to the Oxus. Samarcand was then a great emporium, and the merchants of India, Turkey, and Persia met there to exchange their wares. The ships sailed across the Caspian to the port of Astracan, at the mouth of the Volga. Thence the goods were carried up the river to the city of Novgorod, in the province of Reizan (a city that must have been considerably to the south of the famous Nijni Novgorod of to-day), then overland for some miles to the river Don, where they were loaded in barks and carried down stream to the Sea of Azof, and on to the port of Caffa or

Theodosia, in the Crimea. Caffa belonged at that time to the Genoese, and they came there in their galliasses to fetch Indian commodities, which they distributed throughout Europe. In the reign of Commodus, emperor of Armenia, a better route was followed, by the merchandise being transported from the Caspian Sea through Georgia to the city of Trebizond on the Black Sea, whence it was shipped to all parts of Europe. This was doubtless the origin of the connection of the Armenians with the trade of India. So highly was this route approved of, that another Armenian emperor is said to have actually begun to cut a canal, 120 miles in length, from the Caspian to the Black Sea, for the greater convenience of the trade, but the author of this scheme was slain and the enterprise fell through.

After a time the Venetians came upon the scene, and took up a new and much shorter trade route to India, that down the river Euphrates,—a route which even at the present day is believed by some to be the best that could be selected for communication between India and Europe. The Venetian merchants sailed from Venice to Tripoli; thence their goods were carried in caravans to Aleppo, which was a famous mart, and whose reputation Shakespeare did not fail to notice. From Aleppo the caravans made their way to Bir on the banks of the Euphrates. Here the merchandise was transferred to boats, and conveyed down the river to a point near Baghdad on the Tigris. Baghdad being reached, the merchandise was then transferred to boats on the Tigris, and carried down to Bassora and the island of Ormuz in the Persian Gulf. In those days Ormuz was the greatest emporium in the south of Asia. Here all the velvets, cloths, and manufactures of the West were exchanged for the spices, drugs, and precious stones of the East.

The wealth acquired by the merchants of Venice in their trade with the East excited the envy of the whole of Europe. The Portuguese especially spared no expense in their endeavours to discover a new route to India, and in the latter part of the 15th century they found their way to Calicut by the Cape of Good Hope; and the cheapest route between Europe and India was the high sea. But after making use of the Cape sea route for 400 years, the world has returned to that by the Red Sea, which was followed by the ships of king Solomon and Hiram king of Tyre.

Along the eastern coast of Africa, merchants from Great Britain, France, Portugal, and Germany are now settled, but Asiatics form a connecting link between the Europeans and the African races. Arabs, and Hindus from Sind and from Cutch, have from time immemorial traded on that coast, and the Arab dynasties of Johanna and of neighbouring places gave accounts of their arrival on the coast, which was long prior to that of the Portuguese, having been far back in the middle ages, and there appears to have been settlements on the coast of powerful Arab and Persian emigrants in the early centuries of the Christian era.

The arrival of the Portuguese revolutionized the trade. It was not only that a stop was put by their discovery to the Venetian and Genoese trade with India, but its effect was very nearly to drive away from the coast of Africa the Indian and Arab traders who had carried on commerce in this region. Vasco da Gama and the early Portuguese traders

describe in these regions a state of things much superior to what we have since known of them. They describe the region near the coast north of the limits of Cape Colony as occupied by well-settled kingdoms, some ruled over by Arabs, some by natives, and all enjoying a tolerably advanced state of civilisation. The European traders did not contribute to the peace and happiness of this region. The stronghold of Captain Kyd is shown still in the neighbourhood of Johanna, and his castle was certainly built about that time. A system of plunder prevailed. The power of the Portuguese was much crippled by their rivals, but when they were on the mainland they did nothing but turn their attention to the capture and sale of slaves; commerce dwindled, and the country sank. The early Portuguese maps show that the country which in those older maps was represented as filled with towns, has in the later ones been set down as almost unknown.

The people who have now the most influence in commerce, and carry on by far the largest trade, are the Asiatics from the north-west coast of India. They are of different tribes. None of them can tell very accurately when they began to come to Africa to trade. They do not bring their wives and families with them, but are generally young men who trade on the coast for some years, and return to India to manage the same trade in its home branches. During the Portuguese domination, they were very nearly expelled. The Bhattia and Banya, who form a large number of these traders, are Hindus, and are very strict ones; yet it is remarkable that they may leave India and live in Africa for years, without incurring the penalty of loss of caste which is enforced against Hindus leaving India in any other direction.

Several land routes through Central and High Asia continue to be followed. The present channels of trade between Afghanistan, Persia, Western Turkestan, and India, are the passes of the Sulimani range and those leading to and from Peshawur. The Moolla pass near Gandava, level throughout, may be traversed in all seasons. Through the Bolan pass the trade passes from Kandahar into Sind, a distance of 400 miles. The Guleri pass, opposite Dehra Ismail Khan, is the chief trade route between Afghanistan and the Panjab; the trade through it is in the hands of Povindah, a hereditary clan of merchants. The Tatar and Abkhana passes, leading from Kabul to Peshawur, are practicable all the year. The Suliman mountains form the western frontier of the Panjab and Sind. The Bolan pass collects the trade both of Kandahar and Kalat, and debouches upon Sind at the important mart of Shikarpur, whose merchants have direct dealings with the remote cities of Central Asia. The Gomal pass, leading from Ghazni to Dehra Ismail Khan, is followed by the half-military, half-trading clan of Povindahs, who bring their own caravans of camels into the heart of India. The Khaibar pass leads from Kabul to Peshawur. The aggregate value of the annual trade with Afghanistan cannot be less than one million sterling each way, or a total of two millions. In 1875-76 the total imports from Kabul were valued at £914,000, consisting chiefly of raw silk, dried fruits and nuts, manjit or madder, and other dyes, charras (an intoxicating preparation of hemp), and other drugs, wool, and furs. The total exports were valued at £816,000, chiefly cotton goods both

of native and European manufacture, Indian tea, indigo, and salt.

The Panjab also conducts a considerable business, *via* Kashmir, with Yarkand, Kashgar, and Chinese Tibet, estimated at about one million sterling altogether. The chief marts on the side of India are Amritsar and Jullundhur, from which latter place the route runs northwards past Kangra and Palampur to Leh, where a British official has been stationed since 1867, in which year also a fair was established at Palampur, to attract the Yarkandi merchants. Merchandise is usually conveyed across the Himalayan passes on the backs of sheep and yaks; but British enterprise has successfully taken mules as far as Leh. In 1875-76, the total imports from Kashmir were valued at £484,000, chiefly pashmina or shawl-wool, charras, raw silk, gold dust, silver ingots, and borax; the exports were valued at £342,000, chiefly cotton goods, food-grains, metals, salt, tea, and indigo.

In this land traffic the difficulties to contend with are partly from the social and political state of the nations through which the trade passes, and partly the physical difficulties of the countries which it has to traverse. Every skein of Bokhara silk in the market of Amritsar, has to traverse upwards of 1000 miles over unbridged rivers and mountain passes, one of them 11,700 feet above the level of the sea; every fabric from Europe exposed in the bazar at Yarkand, has to perform a journey of 525 miles from the Panjab, over passes of 11,300, 12,570, 13,446 feet in height, to Leh, thence over still loftier mountains and through an inhospitable route for 575 miles more. Nevertheless, to combat these difficulties, we find in existence an indomitable mercantile energy, hereditary in certain tribes, as the Babi of South Afghanistan, the Povidah of the Guleri pass, the Paracha of Turkestan, and the Kiryakash of Yarkand. Year after year their caravans stream into the Panjab from Mashed, Kabul, Bokhara, and Yarkand, bringing tales of perils overcome; native ballads bewail the hardships of the travelling merchant, but they still stream on.

Afghanistan, a mountainous region lying between lat. 30° and 36° N., and long. 60° to 68° E., with a population estimated at 4,200,000, contains within its limits three great entrepôts of trade between Europe, Persia, Turkestan, and India,—Herat, Kabul, and Kandahar,—where the silk of Bokhara and Khotan, the shawl-wool of Kirman on the south-west, and Khokand, are exchanged for the fabrics of Europe and for the indigo and the spices of the east. Passing the well-watered plains of Murghab and the petty Uzbek states to the north-west of the Bamian hills and the Kunduz districts, in whose eastern frontier are the ruby mines of Badakhshan, and the lapis-lazuli quarries of the valley of the Kokcha, we come to the plains of the Oxus and Jaxartes, the Amu Dariya and the Syr Dariya, into which Russia has passed, but formerly divided politically into the three Uzbek khanate states of Khiva, Bokhara, and Khokand. Of these, Khiva khanate has a population estimated at 2,500,000; Bokhara, one of 2,000,000; but Bokhara is at once the most productive, and its capital is the great depôt for the trade of Central Asia, occupying the position held in more ancient times by Ukh and Samarcand. Its silk is used throughout the north-west of India; its cotton is exported largely to the north; and the black lambskin wool

of Karakul, one of its provinces, is a staple article of trade; while it imports considerable quantities of tea, fur skins, iron, and cotton goods. Caravans leave yearly for Russia *via* Orenberg and other frontier towns, and the trade with that country is estimated at upwards of £300,000 per annum; it has also a considerable trade with Western China *via* Yarkand, with Persia *via* Mashed, and with India *via* Kabul and Peshawur. Under Russian supremacy, Samarcand is resuming its former position as the more important mercantile site.

Proceeding eastward to the borders of *Chinese Turkestan*, including the provinces of Yarkand, Kashgar, and Khotan, we find the former the entrepot of trade between China and Bokhara, and the latter celebrated from the time of Ctesias for its mineral products, its jade and emeralds, its shawl-wool and flax; a considerable importer of furs, broadcloth, leather, and sugar, and at one time the entrepot of a vast trade with Hindustan. Turning south, we come to the kingdom of Kashmir, including its outlying province of Ladakh, the former sending its valuable shawls to all parts of the world, while the latter supplies shawl-wool in exchange for opium, the produce of the Kulu hills, otter-skins, cotton piece-goods, spices, and drugs.

The Quetta trade goes on to Kandahar, but not much further west, as the maritime trade from Bombay up the Persian Gulf carries articles more cheaply than they can be conveyed by any land route.

The trade into Kashmir is conducted with the districts of Hazara, Rawalpindi, Jhelum, Gujerat, Sialkot, and Gurdaspur.

With Kabul the trade passes through Peshawur, Kohat, Dehra Ismail Khan, and Bannu. That through Peshawur is by the Khaibar, Tatara, Abkhana, and Gandul routes; that from Kohat is by the Thul and the Kurram valley; that by the Dehra Ismail Khan district goes by the Gomal pass, and Sewastan is reached by this.

The Bajaur trade is *via* Peshawur and Hazara; to Yarkand, *via* Amritsar; and to Ladakh, through Kulu.

The route to the west from Kabul to Bokhara runs *via* Bamian, Saighan, Donba, Hibark, Hasrak Sultan, Kulm, Balkh, Kilif-ford, and Karsbi. Bokhara is the great centre mart to which merchants resort from Samarcand, Tashkand, and Khokand.

The Chinese Tibet trade goes *via* the Hindustan Tibet road, the several routes converging at Wang-tu, where the Sutlej crosses the road. At Gartokh town, in Chinese Tibet, a commercial fair is held twice a year, at which traders meet from Ladakh, Nepal, Kashmir, and Hindustan.

The routes to Tibet are by five passes, viz. the Nilanghat, at the eastern corner of Native Garhwal (Tehri); the Mana and Niti passes in British Garhwal; and the Johar, the Darma, and the Byans passes in Kamaon.

The routes into Nepal are by Kamaon, Philibhit, Khari, Bahrnitch, Gonda, Basti, and Gorakhpur.

Nepal Trade Routes.—From Khatmandu two routes branch off over the central range of the Himalaya, which both ultimately come down into the valley of the Tsaupe, or great river of Tibet. In 1877-78 the registered trade with Nepal (which is doubtless under-estimated) amounted to a total of £1,687,000, of which more than

two-thirds was conducted by Bengal. The exports from Nepal were valued at £1,054,000, the principal items being food-grains and oil-seeds, cattle, timber, and horns. Other articles of export are musk, borax, chiretta, madder, cardamoms, chauri or yak tails, ginger, balchar or scented grass, furs, and hawks.

British India is geographically adapted to maritime trade, and an Indian nation might have been a naval power almost as easily as the British themselves have become so. The coast of India offers a ready means of intercourse with foreign countries. The mountains on the north are a great barrier to trade with Central Asia. But to the south-east and west are countries and people with whom the natives of India have established independent relations. India possesses a long coast-line of over 2000 miles and about 300 harbours; but the foreign trade of the Indian empire is practically confined to Akyab, Cocanada, Chittagong, Coringa, Negapatam, Beypur, Calcutta, Bombay, Madras, Rangoon, Moulmein, Colombo, Trincomalee, Galle, Tuticorin, and Kurachee, all of which, excepting Madras, are excellently situated as central marts for the distribution of articles of commerce. To Rangoon, Moulmein, and Bassein naturally flow by the Irawadi all the products of Upper Burma and of Pegu; while the railway between Rangoon and Prome offers further facilities for the conveyance of merchandise. Calcutta is the most convenient point of distribution of the trade conveyed by water through Bengal, while it is also the terminus of the two main railway systems of Bengal. The river, too (formerly dangerous to navigation), is now carefully charted, while the Port Trust has provided conveniences for shipping which are probably unequalled in the whole world for the ease with which cargo is loaded and discharged. The Northern Bengal State Railway has opened out rich tracts, producing tobacco, jute, and other valuable commodities in great abundance, and rendering trade to some extent independent of the rivers in that region, which cease to be available highways for the conveyance of goods when the waters are low.

Sir John Strachey has remarked that 'India is a country of unbounded material resources, but her people are poor. Its characteristics are great power of production, but almost total absence of accumulated capital. On this account alone the prosperity of the country essentially depends on its being able to secure a large and favourable outlet for its superfluous produce. But her connection with Britain and the financial results of that connection compel her to send to Europe every year about 20 millions' worth of her products, without receiving in return any direct commercial equivalent. This excess of exports over imports is, he adds, the return for the foreign capital, which is invested in India, including under capital not only money, but all advantages, which have to be paid for, such as intelligence, strength, and energy, on which good administration and commercial prosperity depend. From these causes, he says, the trade of India is in an abnormal position, preventing her receiving the full commercial benefit which would spring from her vast material resources.' In the thirty-six years between 1835 and 1871, the value of merchandise exported from India amounted to £1,012,000,000; the value of merchandise imported into India, to £583,000,000,

showing an excess of £429,000,000 on the exports. The value of treasure imported in the same period was £312,000,000 against £37,000,000 re-exported, being a nett import of £275,000,000. In 1880, India sold to foreign nations £66,000,000 worth of strictly Indian produce, which the Indian husbandman had raised, and for which he was paid. In the year 1881-82 the total trade of India, including exports and imports, exceeded £141,000,000.

The commercial transactions of British India with foreign countries are chiefly with the United Kingdom of Great Britain and Ireland, and with China. In the year 1881-82, the total value of the imported merchandise and treasure was £58,314,865, and that of the exports £82,999,346. Cotton piece-goods, twist and yarn, thread and other sorts, imported were of value Rs. 29,99,41,635. The values of sugar, refined and unrefined, and of woollen goods, were each above a million sterling; metals, raw and manufactured, 3½ millions; while of the exported articles the opium was valued at Rs. 12,43,21,418; rice, grain, pulse, wheat, seeds, £17,240,750; tea and coffee, £5,056,601; raw cotton, cotton goods, twist and yarn, £16,946,475. In that year twenty-five of the more important

Imports, were—		Exports, were—	
Animals, . .	Rs. 20,85,436	Coffee, . .	Rs. 1,44,74,650
Apparel, . .	64,14,039	Cotton, raw, . .	14,93,59,595
Coal, . . .	1,02,00,436	" twist	
Coffee, . . .	10,38,082	and yarn, . .	1,36,88,362
Corals, . . .	18,53,544	" manuf., . .	64,16,798
Cotton, raw, .	10,42,766	Indigo, . . .	4,50,90,802
" twist and		Other dyes, . .	20,14,133
yarn, . . .	3,22,20,648	Grain, rice, . .	8,30,81,669
" manuf., .	20,77,20,986	" wheat, . .	8,60,40,815
Drugs, . . .	38,18,880	" other, . .	32,85,022
Dyeing materials,	17,14,906	Hides & skins, .	3,94,87,924
Hardware, . .		Jute, raw, . . .	5,03,03,023
cutlery, . .	62,66,132	" manuf., . .	1,09,75,886
Jewellery, . .	30,89,241	Lac,	71,95,283
Leather, . . .	16,95,900	Oils,	46,82,274
Liquors, . . .	1,30,86,720	Opium,	12,43,21,418
Machinery, . .	1,22,10,464	Seeds,	6,05,40,987
Metals, . . .	3,51,68,734	Tea,	3,60,91,363
Oils,	56,05,853	Wood,	56,57,025
Paper,	47,31,342	Wool, raw, . . .	81,45,513
Provisions, . .	1,05,30,831	Woollen fabrics, .	19,66,830
Salt,	56,90,671	Coir, manuf., . .	18,21,136
Silk, raw, . . .	74,92,107	Gums and resins, .	25,45,896
" manuf., .	1,21,17,056	Provisions, . . .	26,98,349
Sugar, refined, .	1,24,21,892	Spices,	24,58,900
Tea,	19,96,906	Stone, Jade, . .	23,01,800
Woollengoods, .	1,12,12,320		

British India Foreign Trade.

Year.	Imports.		
	Merchandise.	Treasure.	Total.
1874-75	£36,222,113	£8,141,047	£44,363,160
1875-76	38,891,656	5,300,722	44,192,378
1876-77	37,440,631	11,436,120	48,876,751
1877-78	41,464,185	17,355,459	58,819,644
1878-79	37,800,594	7,056,749	44,857,343
1879-80	41,166,003	11,655,395	52,821,398
1880-81	53,116,770	8,988,214	62,104,984

Year.	Exports.		
	Merchandise.	Treasure.	Total.
1874-75	£56,359,240	£1,625,309	£57,984,549
1875-76	58,091,493	2,200,236	60,291,731
1876-77	61,013,891	4,029,898	65,043,789
1877-78	65,222,328	2,210,996	67,433,324
1878-79	60,037,513	3,982,228	64,919,741
1879-80	67,212,363	2,035,148	69,247,511
1880-81	74,580,602	1,440,441	76,021,043

The opening of the Suez Canal in 1869 stimulated every department of eastern trade into greater activity, but has not materially changed

its character. In 1871-72, the first complete year for which statistics are available, the total number of steamers which sailed *via* the canal was 422, with a tonnage of 464,198. In 1875-76, 85 per cent. of the imports into India from Europe and Egypt (excluding treasure) passed through the canal, but only 29 per cent. of the exports. The actual values of canal trade in 1877-78 were 29 millions sterling for imports into India, and 23 millions for exports from India. The canal has reduced the length of the voyage from London to Calcutta by about 50 days. The route round the Cape was more than 11,000 miles, and occupies, by sailing ships, nearly three months; that from Britain through the canal is less than 8000 miles, and takes, by steamers, from 30 to 45 days. The numbers and tonnage of steamers adopting the canal route have rapidly increased:—

Year.	No.	Tons.	Year.	No.	Tons.
1877-78	1137	1,617,839	1880-81	1459	2,133,872
1878-79	941	1,426,957	1881-82	1989	2,887,988
1879-80	1067	1,609,769			

Bombay is the sole outlet for the products of Western India, Gujerat, the Dekhan, and the Central Provinces; Karachi (Kurrachee) performs a similar office for the valley of the Indus, and Rangoon for that of the Irawadi. Bombay is almost exclusively dependent upon its cotton, seeds, and wheat; and a bad crop of any of these is a bad time for the export trade from that port generally.

Calcutta is an outlet for a vast tract of country, capable of producing, besides wheat and seeds, which Bombay does export, though to a less extent, an infinite variety of staples, such as tea, oil-seeds, jute, raw and manufactured in the shape of gunny bags and cloth, also rice and hides. After the opening of the Suez Canal, the exports from Calcutta rose in value from less than 20 millions sterling in 1867-68 to nearly 29 millions in 1878-79.

Rangoon is, however, the most thriving place, commercially, in the Indian Empire, considered relatively to its size. The import trade in 1880-81 was valued at more than £3,846,346, being an increase of 267 per cent. in 10 years; while its export trade exhibited an increase of 233 per cent. in the same period. Burma is without doubt the most prosperous province of the empire, and its people, free from the religious and caste prejudices with which the Hindus and Mahomedans of India are imbued, and fond of personal comfort and adornment, spend their earnings freely on substantially-built and healthy habitations, on silk attire, jewellery, cigars, European provisions of kinds such as in India are consumed by the British-Indian population only, on crockery and glass-ware, and other things which conduce to the personal comfort of a man who will not, as in India, be content to live in a mud hovel.

Europe.—Owing to the removal of the E. India Company's monopoly, and subsequently of customs and navigation laws, and still later the opening of the Suez Canal, the current of trade shows a disposition gradually to return to the channels chiefly used before the discovery of the passage round the Cape. The cities on the Mediterranean are again receiving and profiting by that share of the Eastern trade which enriched them, until it passed first into the hands of the Portuguese, and thence into those of the Dutch and English. London

still retains its supremacy as the centre of at least 60 per cent. of the trade of the Indian Empire; but Trieste, Venice, Genoa, and Marseilles play an increasingly important part in the commercial race.

The imports of merchandise *via* the Suez Canal from Europe, Egypt, and the Levantine coast of Asiatic Turkey, increase year by year. The route is not so largely used for exports of Indian produce, the reason being that large quantities of these, such as opium and rice, find their way to China and the Straits, Mauritius, Ceylon, Arabia, and other countries.

China trade with India is practically confined to the opium traffic, though, within the last few years, that country has become an important consumer of Indian-made twist, which no doubt displaces to some extent in the Chinese markets the spinnings of Manchester. The time will come when the Chinese will spin for themselves, and then India will have to be content with her own local markets for her goods. In all respects but one the Chinese are better adapted than the people of India for the profitable manufacture of cotton: they are capable of longer and more sustained exertion, they are more ingenious and skilful as operatives, and their commercial classes are at least as acute and bold in speculation as those of India. But China is compelled to import cotton, and India will have a good market in China and Japan for a portion of the out-turn of her mills. The imports from China, even with the addition of treasure, amount to hardly a fifth of the exports thither, the truth being that the opium is paid for by China through Great Britain. The chief articles imported into India from China are copper (supposed, however, to be Japanese, imported *via* China), raw silk and silk piece-goods, and sugar and tea in small quantities. The imports of raw silk reach the comparatively high figure of 41½ lakhs (£415,000). The sugar brought from China is landed in Bombay, where it supplements or competes with Mauritius sugar. The tea imported from China is of inferior quality.

Straits Settlements trade must be regarded in connection with the trade with China. The goods imported are of little consequence, tin excepted.

Ceylon trade with India is identical in character with the constant trade carried on from port to port. Crowds of Tamil labourers flock to Ceylon every year from the Madras Presidency, to work on the coffee plantations, and over two-thirds of the exports consist of grains for their sustenance. The imports from Ceylon are hardly a sixth of the exports in value.

Between India and France the articles chiefly consist of apparel and millinery, brandy and wines, and silk goods; while the exports comprise cotton, coffee, indigo, oil-seeds, especially rape and gingelly, raw silk, and raw jute.

After France, the *United States* do the most trade with India. Imports are small, and practically were confined to ice and kerosene oil; but ice is now manufactured and sold in India at half the rate hitherto charged by the Tudor Ice Company. In kerosene the value rose from 3,18,898 rupees in 1876-77 to 16,37,966 rupees, and 21,07,907 rupees in the two following years. The imports of grey cotton goods from America are increasing. Indian exports to the United States consist mainly

of indigo, hides, skins, raw jute, gunny bags and cloth, lac, saltpetre, and linseed.

Mauritius sends sugar very largely to India. The most important export to Mauritius is rice, which with other food-grains amounted to nearly a krór of rupees in value.

Italy's trade includes corals, glass beads, false pearls, spirits and wines, and silk goods. The exports to Italy consist mainly of raw cotton, hides, oil-seeds, sesame, and raw silk. The total value of the import and export trade with Italy in 1878-79 was about two krór of rupees.

India is rich in raw products, mineral, vegetable, and animal. It supplied all its own people's wants until the maritime intercourse with foreign nations, and particularly since the construction of lines of railway allowed the delivery of many articles in the Indian ports, and even in its remoter provinces, at lower rates than the native products could be obtained. Its marketable mineral substances useful in the arts, are,—alum, agates, amber, antimony, arsenic, asbestos, barytes, beryl, bismuth, bloodstone, borax, cornelian, chrome ore, coal, cobalt, copper, corundum, diamond, emerald, fluor spar, garnet, gold, graphite, gypsum, iron ores, jade, jasper, kao-lin, kyanite, lapis-lazuli, lead, lithographic stone, magnesite, manganese, marbles, meerschauum, mercury, mica, mineral oils, petroleum, platinum, potstone, rock-crystal, rubies, salt, saltpetre, sapphire, turpentine, silver, sodium compounds, spinel, sulphur, talc, tin, topaz, turquoise, zinc. The chief of the vegetable exports are,—coffee, cotton, indigo, grain, and pulse, jute, oils, opium, seeds, sugar, tea, and woods; and of animal produce are,—living animals, feathers, hides and skins, horns, ivory, lac, musk, oils, saltpetre, silk, wax, wool.

The chief imports into British India are,—apparel, coal, cotton twist and manufactures, liquors, machinery and mill-work, metals, provisions, railway plant and rolling stock, silk, raw and manufactured, spices, sugar, and woollen goods. In the progress since the opening of the Suez Canal, British India is now competing with some of these. Indian mills have taken strong hold of the market for the lower qualities of twist. Of metals nearly 80 per cent. consisted of iron, which always forms the largest item in this category. Sugar comes third in the list of imports, the value being 1,48,08,805 rupees. Indian beer costs but 5½ rupees a dozen at Simla, as against 9 rupees a dozen charged for English beer. Imports of various light German beers have largely increased. The imports of raw silk and silk goods amount to nearly a krór and a half (about £1,500,000), the raw silk being valued at about 56,75,000 rupees. This may be due to a decline in the silk-weaving industry in India. The import of coal, coke, and patent fuel has fallen off. Very little coal is landed in Calcutta, the bulk of it going to Bombay, which is too far from the deposits of Central India to be able to avail itself of their product with profit.

In 1881-82 the value of the foreign merchandise re-exported from India was 2,64,67,165 rupees.

The re-exports are mainly goods consigned in the first instance to Bombay, and then re-exported to ports in the Persian Gulf and Red Sea, Zanzibar, and the eastern coast of Africa. More than half of these consist of cotton twist and

piece-goods (chintzes and prints), amounting to 1,32,47,706 rupees in value.

Country.	Value in Rs. of Merchandise sent to India in 1881-2.	Value in Rs. of Ind. Produce returned.
Great Britain,	38,58,16,712	34,34,24,684
Austria,	29,58,607	2,43,47,257
Belgium, . . . . .	...	1,97,03,142
France,	67,75,615	8,00,58,716
Germany,	7,82,520	75,79,957
Holland,	15,179	51,56,710
Italy,	52,44,334	3,10,23,810
Malta,	46,455	70,41,611
Russia,	3,78,578	5,14,228
Spain,	5,137	15,43,575
Cape of Good Hope,	26,864	7,37,769
East Coast of Africa,	30,51,623	23,54,896
Egypt,	4,81,964	1,68,42,831
Mauritius,	96,46,977	69,55,164
Natal, . . . . .	...	7,20,122
Reunion, . . . . .	...	17,93,450
South America, . . . . .	...	20,93,815
United States,	46,60,641	2,68,18,274
West Indies, . . . . .	...	14,14,071
Aden,	7,26,503	41,51,162
Arabia,	32,83,207	61,81,502
Ceylon,	40,18,387	1,56,79,230
China—Hong-Kong,	1,34,99,675	9,32,68,094
Treaty Ports,	19,09,936	4,17,05,566
Opium to Hong-Kong, . . . . .	...	6,85,62,329
„ Treaty Ports, . . . . .	...	4,15,54,246
Japan,	31,902	13,41,852
Java, . . . . .	...	3,07,437
Maldives,	1,84,005	1,90,600
Mekran, Sonmiani,	6,75,796	3,20,020
Persia,	49,36,205	27,63,634
Siam,	1,03,498	3,39,857
Straits Settlements,	1,54,18,852	3,33,56,696
Turkey in Asia,	25,17,154	20,30,176
Australia,	22,59,890	79,96,878

In 1881-82, the declared value of the opium exported was 14,32,33,143 rupees, the largest sum it had attained. Grain and pulse were valued at 17,24,07,506 rupees, the two most important of these being rice and wheat. The exports of raw cotton, twist, yarn, and manufactured, were 16,94,64,755. The first mill for the manufacture of cotton yarn and cloth by steam machinery was opened in Bombay in 1854. Since then others have been established in various parts of India, but mostly in the city of Bombay and in the cotton-growing districts of Gujerat. In 1878-79 there were 58 cotton mills in India, containing 1½ million spindles and 12,000 looms, which employed upwards of 40,000 persons,—men, women, and children. India commits enormous waste by exporting rapeseed, linseed, and til (*Sesamum orientale*) in a crude condition, instead of expressing it on the spot, and obtaining thereby a valuable food for cattle and land fertilizer in the shape of oilcake. The manufacture of jute on a large scale was unknown until 1857, but there were 21 jute mills in India in 1881.

Indian tea exported was 48,691,725 lbs., valued at 3,60,91,360 rupees. The cultivation of tea and coffee has taken deep root in India, and a large amount of European capital and indigenous labour is absorbed by these industries. No less than 664,326 acres were taken up in 1878 in connection with tea cultivation, though only 200,000 acres were actually planted with it. The quantities of coffee exported have hardly increased during the last 11 years, prices have largely augmented, coffee being now worth nearly double what it was at that time. The quantity exported in 1881-82 was

346,364 cwt., mainly the produce of Mysore, Coorg, and the Wynad district of Malabar. More could be done in the Indian tobacco trade if the Indian leaf could be obtained of somewhat better quality, the French and Italian tobacco departments being both quite prepared to take Indian tobacco in large quantities, if it could be supplied of a suitable quality. It is gradually advancing in public estimation in India and abroad. The quantity exported in 1881-82 was 10,530,325 lbs., value 11,50,380 rupees.

Inland Frontier Trade crosses the long land frontier of India on the north, stretching from Baluchistan to Independent Burma.

In 1878-79, the value of the imports and exports of the inland trade was Rs. 8,85,37,193, viz.:

Baluchistan, Rs. 16,45,943	Manipur, . . . Rs. 94,524
Afghanistan, . . 1,49,88,783	Hill Tiperah, . . 1,27,932
Kashmir, . . . 81,61,169	Lushai Hills, . . 77,183
Ladakh, . . . 2,59,212	Towang, . . . 4,19,632
Tibet, . . . 16,47,566	Upper Burma, 3,77,64,717
Nepal, . . . 1,99,31,355	Siam, . . . 12,14,858
Sikkim, . . . 1,81,025	N. Shan States, . 8,06,076
Bhutan, . . . 2,75,980	S. " " " " 53,805
Eastern Hills, viz.:	Karenni, " " 7,19,882
Naga and Mishmi, 1,07,642	Zimmay, . . . 59,195

Agriculture.—The extent to which the population of India are dependent upon the land, may be realized partly from the census returns, which show us that 74 per cent. of the adult male population derive their support from the land either directly or indirectly.

Merchants.—The internal trade of India has never been estimated; it greatly exceeds the external commerce. In the interior of the Bombay Presidency, business is mainly divided between two classes, the Bhattia or Banya of Gujerat, and the Marwari from Rajputana. The former are Vaishnava Hindus of the Valabhacharya sect, the latter are Jains. In the central parts of the Dekhan and Mysore, their place is taken by Lingaets, who follow the Vira Saiva form of Hinduism; but along the eastern seaboard the predominating classes of Hindu traders are the castes named Chettiar, Komati, and Natha Cottiyar. Many of the trading castes of Hindus still claim Vaisya descent.

In Bengal, many of the upper classes of Sudras have devoted themselves to wholesale trade; although there, also, the Jain Marwari from Rajputana and the north-west occupy the front rank. Their headquarters are in Murshidabad district; and Jain Marwari are found throughout the valley of the Brahmaputra as far up as the unexplored frontier of China. They penetrate everywhere among the wild tribes; and it is said that the natives of the Khasia Hills are the only hillmen who do their own business of buying and selling. In the North-Western Provinces and Oudh, the traders are generally called Banya; and in the Panjab are found the Khatiri (Kshatriya), who have perhaps the best title of any to regard themselves as descendants of the original Vaisya.

Not inferior to any Hindus as active, intelligent traders, are the Labbi, a Mahomedan race, who also speak Tamil; another Mahomedan race, the Khoja, have spread from Sind to the western and central parts of the Peninsula of India, and along the shores of Arabia and of eastern Africa as far south as the Portuguese dominions. The Borah and Memon Mahomedans are keen tradesmen. The Mopla Mahomedans are but little engaged in

inland traffic. Other Mahomedans from Persia are trading in all the ports of Southern Asia; and Arab Mahomedans, as merchants and missionaries, are occupying all the eastern and northern parts of Africa, and have gone eastwards through the Indian Ocean to the islands of the Archipelago. Another race of Aryan descent, the Parsees, are seen throughout all the south and east of Asia, and, with mercantile men of Indo-Germanic race, from Great Britain, France, Germany, and America, they conduct nearly all the foreign trade.

The bold, self-reliant non-Aryan tribes of British India have emigrated largely as labourers to Ceylon, the Straits Settlements, and Burma; to the West Indies, to S. America, S. Africa, the Mauritius, and Bourbon; but as skilled producers they have been far outstripped by the Chinese, whose numbers in Borneo, in Australia, Mauritius, and the western of the United States, have assumed political importance; and to the east, in the Archipelago, the Bugi or Macassar men traverse the seas from Sumatra to New Guinea.—*Rich's Kurdistan; Madras Mail*, 7th June 1870; *Imp. Gaz.*; *Stat. Abstract*; *Maritime Trade of British India*; *Foreign and Inland Trade Reports*; *Accounts of Trade and Navigation*; *Moral and Mat. Prog.*; *Miscellan. Statistics*; *Trade and Nav. Accts.*

COMMIA COCHIN-CHINENSIS, a small tree of Cochin-China, with a resinous juice. It yields a gum which possesses emetic and purgative properties, recommended in dropsy.

COMMISSIONER, an appellation generally given in India to officials invested with full revenue and judicial powers. In the Panjab, Sind, Burma, etc., are styled chief commissioners, and have commissioners under them. In the Bengal Presidency, a commissioner is a revenue officer who has the superintendence of several collectorates, with collectors under his control.

COMORAIL, a bay on the Malabar coast, 51 miles north of Severndrug.

COMORIN, or Cape Comorin, in lat. 8° 4' 20" N., and long. 77° 35' 55" E. The Greek writers refer to a bathing festival here, which is still continued.—*Imp. Gaz.* See Cape Comorin.

COMORO, a group of volcanic islands midway between the N. extremity of Madagascar and the coast of Africa. Great Comoro is an active volcano 8500 feet high. They rise over a submarine bank of 500 fathoms.

COMPASS.

Sockcompass, . . . DAN.	Paduman, . . . MALAY.
Zeekompas, . . . DUT.	Compassode marear, PORT.
Compas de mer, . . . FR.	Kompass korabelnii, RUS.
Roussole,	Sjocompass, . . . SP.
Kompass, . . . GER.	Aguja de marear, . . .
Bussola, IT.	Kompassu, . . . TEL.

The compass is used for nautical purposes by the principal native traders of Southern and Eastern Asia, and of the Archipelago. The Bugis of Celebes use small rude compasses, made expressly for them by the Chinese of Batavia, at the very moderate cost of from one shilling to eighteenpence a-piece. The directive power of the magnet is said to have been known to the Chinese for many ages,—by their own account, no less than 2634 years B.C. Their knowledge of the magnet is supposed to have led them to a knowledge of the compass; and the mariner's compass was invented by the Chinese in the reign of Hoang-Ti. The subdivisions of this nautical instrument, as

made by the Arabs, the Chinese, and the Maldives, all vary. The Malay compass is divided into sixteen parts, twelve of which are multiples of the four cardinal points. For the cardinal points the different nations have native terms; but for nautical purposes, those of the Malay language are used throughout, as in the case of the nations of Celebes, the most expert native navigators of the present day. The introduction of iron ships has materially affected the value of the compasses on board of them, the variation being as much as five points, even up to $24\frac{1}{2}$ and $35\frac{1}{2}$. The sole apparent remedy for this, but it is one of easy application, is to erect a high platform, 15 feet high, over the taffrail, on which to place the compass, and to examine repeatedly.—*Crawford's Dict.*; *Bunsen*, iii. p. 383; *M.C. Dict.*

COMPOSITÆ. **VAILL.** A very extensive order of plants, now known as *Matricariaceæ*.

COMPOUND. This Anglo-Malay word is a corruption of the Malay *Compong* or village, and properly applies to the outhouses of the servants, which are erected within the enclosure. It is applied in almost the same sense all over British India, where, however, some suppose it to be derived from the Portuguese word *Campagna*; and another writer says it is from the Portuguese word *Componze*, and still another *Compinho*. It is also applied by the Europeans of India to the grounds or enclosure in which a house stands.—*Earl*; *Sirr*.

COMPRADORE. **ANGLO-INDIAN.** A purveyor; in China, an accountant.

COMPTI, **Kompti,** **Kamatti,** **MAHR., TAM., TEL.,** in the Peninsula of India, persons engaged in trade, as shopkeepers and general merchants, and commonly recognised to be *Vaisya* Hindus; they wear the sacred string or *zonar*. They are, amongst the Teling and Tamil people, what the terms *Gujerati*, *Banya*, *Marwari*, and *Vais* are amongst the traders from *Rajputana* and *Gujerat*; they are never soldiers.

CONAJI ANGRIA, a person of low origin who long carried on a piratical warfare on the western coast of India, and rose to princely power. *Gheriah* was his headquarters, but *Severndrug* and every creek were fortified. After he acknowledged *raja Saho*, he remained in nominal dependence on the *Mahratta* state, but employed his own resources with little or no control. His piracies, which he called levying *chouth* on the sea, rendered him formidable to all his neighbours. The British made repeated attacks on him with considerable naval forces, and on one occasion (A.D. 1719) in co-operation with the Portuguese, yet failed in all their attempts. The Dutch also sent a strong force against him at a later period (A.D. 1724), with equal ill success. The *Peshwa* interposed in a dispute between two brothers of the family, and received from one of the brothers two forts situated in the Ghats (about A.D. 1734). The contest, however, continued, and the *Peshwa*, though latterly assisted by a British fleet, was unable to bring it to a conclusion till the time of *Baji Rao's* death. Long afterwards, *Gheriah* was captured by *Clive* and *Admiral Watson* in 1755.—*Elphin*, p. 641.

CONCAN, a small, narrow strip of land lying between the Western Ghats and the sea-coast. The low land in the *Concan*, *Gujerat*, and *Malabar* is traversed by many rivers and smaller streams

running to the sea, and is indented by numerous creeks and channels of the ocean. The cold weather is clear and bracing, but the hot season of April and May is succeeded by the deluging rains of the south-west monsoon, when 150 inches fall from June to September, and render much of the already humid lands impassable swamps; the atmosphere is then very damp. The *Concan* districts extend from *Goa* to *Daman*, or very nearly to the *Tapti* river. In the northern parts of the *Bombay* Presidency, the chain separating the *Concan* from the *Dekhan* is called the *Northern Ghats*, or *Sahyadra* mountains. See *Konkan*.

CONCH or **Chank**, species of *Turbinella*. See *Chank*.

CONCRETE. *Dana* terms this calcareous sand rock, 'drift sand rock.' Major-General *Nelson* terms it *Æolian* formation. It occurs on the coast near *Bombay*, and at the *Bermudas* Islands.

CONCUBINAGE is very common all over India amongst all religionists. It is more particularly prevalent in great cities, and in places where, from any cause, the people are necessarily absent from their families and birthplaces.

CONDA-CUPI. **TAM.** A necklace.

CONDAPILLY, in lat. $16^{\circ} 37' N.$, and long. $80^{\circ} 33' E.$, is a town in the *Masulipatam* district in the *Northern Circars*. The rocks of the hills near contain garnets, and diamond mines are near.

CONDA-PUCHI. **TAM.** A head ornament.

CONDIMENTS.

Assaisonnement, . . **FR.** | *Condimento*, . . . **SP.**
Würze, *Brühe*, **GER.** | *Fr.?*

Aromatic barks, roots, seeds, and spices, used as condiments in South-Eastern Asia, are found in every bazar for domestic use, and some of them are largely exported. The following are the better known plants used:—

<i>Allium sativum.</i>	<i>M. pulegium.</i>
<i>Archangelica officinalis.</i>	<i>M. sativa.</i>
<i>Arecæ catechu.</i>	<i>M. viridis.</i>
<i>Cassya filiformis.</i>	<i>Moringa pterygosperma.</i>
<i>Cicca disticha.</i>	<i>Laurus cinnamomum.</i>
<i>Chavica Roxburghii.</i>	<i>Myristica moschata.</i>
<i>Crocus sativus.</i>	<i>Narthex asafoetida.</i>
<i>Curcuma longa.</i>	<i>Nigella sativa.</i>
<i>Cinnamomum iners.</i>	<i>Ocimum basilicum.</i>
<i>Citrus bergamia.</i>	<i>Pimpinella anisum.</i>
<i>Carum carui.</i>	<i>Ptychotis ajowan.</i>
<i>Coriandrum sativum.</i>	<i>Phyllanthus emblica.</i>
<i>Cuminum cyminum.</i>	<i>Piper nigrum.</i>
<i>Capsicum annuum.</i>	<i>Rosmarinus officinalis.</i>
<i>C. baccatum.</i>	<i>Salvia officinalis.</i>
<i>C. grossum.</i>	<i>S. sclarea.</i>
<i>C. frutescens.</i>	<i>Satureja hortensis.</i>
<i>C. minimum.</i>	<i>S. montana.</i>
<i>C. Nepalensis.</i>	<i>Sinapis, sp.</i>
<i>Caryophyllus aromaticus.</i>	<i>S. Chinensis.</i>
<i>Coffea Arabica.</i>	<i>Spondias mangifera.</i>
<i>Carthamus tinctorius.</i>	<i>Trigonella fœnum-græcum.</i>
<i>Elettaria cardamomum.</i>	<i>Tamarindus Indica.</i>
<i>Faniculum panmorium.</i>	<i>Thymus vulgaris.</i>
<i>Garcinia purpurea.</i>	<i>T. citriodora.</i>
<i>Garuga pinnata.</i>	<i>Vanilla planifolia.</i>
<i>Illicium anisatum.</i>	<i>Vitex bicolor.</i>
<i>Mangifera Indica.</i>	<i>Zingiber officinale.</i>
<i>Montha piperita.</i>	

CONDOOLOO. **TEL.** *Cajanus Indicus*; *dhal*. One kind of *dhal* is *condooloo conda*, **TEL.**, *mala-tovarai*, **TAMIL**; another variety is *condi-puppoo*, **TEL.**, *tovarai-purpoo*, **TAM.** See *Dhal*.

CONDYLODERA TRICONDYLOIDES, a cricket of the Philippines. It is exactly like a tricondyla, one of the tiger beetles. Both insects run along the trunks of trees. The tricondyla

are very plentiful; the insect that mimics it is, as in all other cases, very rare. It is a remarkable instance of an insect of another order mimicking a beetle.

CONESSI BARK, Tellicherry bark.

Curayia; Curajia, HIND.	Cheeree; Kutaja, SANSK.
Palapatta, . . . MALEAL.	Veppalei, . . . TAM.
Codaga pala, . . .	Pala codija, Manoopala, TEL.
Crtoo-de pala, . . . PORT.	

Conessi bark is the produce of the Wrightia antidysenterica, belonging to the natural order Apocynaceæ, a native of most parts of India. It is astringent and bitter, and is considered febrifuge; its seeds are termed Indrajow.

Conessi seed.

Lisan ul anasfeer, . . . ARAB.	Indrayava, . . . SANSK.
Indrajow, . . . GUJ., HIND.	Veppalei arisec, . . . TAM.
Ahir, . . . PERH.	

The seeds of Wrightia antidysenterica.—*Faulkner, Eng. Cyc.; O'Sh.*

CONEY. Paleontologists have pointed out the curious fact that the Hyrax Syriacus, called 'coney' in the Bible, Lev. xi. 5, Deut. xiv. 7, 1's. civ. 18, is really only a diminutive and hornless rhinoceros. Remains have been found at Eppelsheim which indicate an animal more like a gigantic hyrax than any of the existing rhinoceroses. To this the name of Acerotherium (hornless beast) has been given. Sha-phan or Danan is supposed to be the hyrax of Scripture.

CONFERVÆ abound in the warm water of the hot springs of Surâjkhand, in Behar; and two species, one ochreous brown and the other green, occur on the margin of the tanks themselves, and in the hottest water; the brown is capable of bearing the greatest heat, and forms a belt in deeper water than the green. Both appear in broad luxuriant strata wherever the temperature is cooled down to 168°, and as low as 90°.—*Hooker, Him. Jour. i. p. 21.*

CONFLUENCE or fork of two rivers is the Sangam of the Hindus, who esteem all such unions sacred, and make pilgrimages to them. That at the junction of the Jumna and Ganges, at Allahabad, is one of the holiest spots in Hindu estimation; and until the early part of the 19th century many of this faith voluntarily drowned themselves there.

CONFUCIUS, Kung-fu-tze, was born B.C. 551 in Tsow, a district of the province of Shantung. He died in the year 479 B.C., at the age of 72 or 73. He was of a ducal house, descended from a brother of Chow, the last sovereign of the Yin dynasty. His father, Shuh-leang-heih, was a soldier of great bravery; and Confucius was the child of a second marriage when he was upwards of seventy years of age.—*Gray, p. 76.* Confucius married when nineteen years of age. He was almost contemporary with Pythagoras, Thales, Solon, Buddha, and Herodotus, in an epoch of philosophical and literary activity equally important for the west, which commenced with Pythagoras, as contemporary of Confucius, embraced Zeno, Empedocles, Herodotus, Thucydides, Socrates, and Plato, and ended with Aristotle, who died about the same time as the Mencius (Mang-tze) of the Chinese. Confucius devoted himself to reducing the traditions and rough records of antiquity into a perfect form, and he succeeded before his death in compiling and editing the five King,—five canonical books which are revered as embodying the truth, upon the

highest subjects, from those whom they venerate as holy and wise men. He was the founder of the school of philosophy in China, which contains injunctions as to conduct, and may be termed the moral code of China, in which learning (Wen), courtesy, good-breeding, and propriety (Li), doing as you would be done by (Shu), sincerity in worship of the deity (Tien), are everywhere inculcated, and form a recognised state religion. Every word he uttered has become in China a maxim, a proverb, and an aphorism; and in the fact that his language is intelligible to every Chinaman at the present day, his inculcations are of greater power than any in the Latin or the Greek, both of which are unknown to their descendants. Once he was asked whether there were one word which represented all the duties of life, he answered 'Shu,' a word which Confucius and his commentators have explained to mean, 'As I would not that others should injure me, so would I not injure them also.' And, certainly, to seek the good of others equally with your own, is to fill a large portion of the field of virtue. The number of his disciples was about 3000, of whom about 72 were his more intimate associates. All his teaching consists of a few simple words. One of his aphorisms, 'Chu chung sin,' verbally, 'Head, faithful, sincere,' mean that fidelity and sincerity are the paramount or primary virtues. Another is that Wen and Li make up the whole sum of human excellences. Another, 'I am yu,' 'Judge others indulgently, yourself severely.'

Confucius was a sage and a statesman. He and Lao-tze were contemporaries, and Lao-tze was the founder of the Taoist or Reason Sect. But Lao-tze was an ascetic, who discouraged acceptance of public employments. He made reason the groundwork of his doctrines, and they have much to recommend them; but his teachings have merged into gross idolatrous rites, the study of astrology and necromancy, fanatical observances, self-inflictions, such as dancing in flames, mutilating the body, practising abstinence and seclusion.

Among other celebrated literary labours undertaken by Confucius in B.C. 490 and the following years, he edited the Yih-king, and appended those annotations which have given the work its subsequent value. What philosophical views may have been attached to the Yih-king of Wan-wang and Chou-kung by the contemporaries of Confucius, we know not. That work, together with the other three works edited or compiled by Confucius, viz. the Shu-king and the Le-ke, constitute the whole of the ancient literature of China which has come down to posterity, and who have it only, as it was explained, arranged or modified in passing through his hands. It is well known that he expressly repudiated portions of it, as containing doctrines adverse to the views which he held and strove to diffuse. The names only of some celebrated ancient books, one dating from the times of Fuh-he himself, have been preserved. It is these circumstances which constitute the labours of Confucius the commencement of a distinct literary epoch. Apart from the labours of Confucius himself, the permanent literary results of this, the first of the two great philosophic or literary epochs of China, are contained in the collection of works called the Four Books, composed by different members of the school which he founded. The last contains a record of the ethical and political teachings of Mencius (Mang-tze), a philosopher who died in

B.C. 317, and closed the first epoch. The Chinese people are in nowise prohibited from worshipping in the Buddhist and Taoist temples; in other words, they may regulate their purely religious life by the tenets of these, or indeed of any other sect. But where Taoism or Buddhism would leave the region of religion, and, in the form of philosophy or morality, extend their direct influence into the domain of the social science and art, there Confucianism peremptorily and effectually prohibits their action. Not only are the national legislation and administration formed exclusively on Confucian principles; it is by them also that the more important acts of the private life of the Chinese are regulated, as for instance marriages. The cause of the prevalence of Mahomedanism in China, in spite of discouragements, lies in the fact that Confucianism says little or nothing of a supernatural world or of a future existence. Hence it leaves almost unsatisfied those ineradicable cravings of human nature, the desire to revere, and the longing for immortal life. That it has, notwithstanding its want of these holds on the human heart, maintained itself not simply in existence, but as the ruling system, is a fact that must, as soon as it is perceived, form for every true thinker a decisive proof of the existence of great and vital truths in its theories, as well as thorough soundness and wholesomeness in the practical rules which it dictates. By Chinese philosophy must be understood Confucian philosophy, and by Chinese morality the moral principles rooted in that philosophy.

The works of Confucius, which are used by his followers, are called the 'five canonical books,' and are held in the greatest veneration. The whole tenor of these works indicate morality and sound political views. One political extract must suffice. Let those who produce revenue be many, and those who consume it few; let the producers have every facility, and let the consumers practise economy: and thus there will be at all times a sufficiency of revenue.

It is the fact that, though the authors of the first and second epochs, Confucius himself included, professed to teach only what was contained in pre-existing sacred books, and though they possibly themselves believed that they did only teach what was virtually contained in such pre-existing books, they nevertheless did, in each case, originate some entirely new views and doctrines.

It is now impossible to ascertain what part of his writings was original, and what obtained from previous writers; but it is generally recognised that he largely annotated the ancient work, *Yi-king*, and bequeathed five classics and four books. His works, *Shu-king* and *She-king*, contain the historical records of the country and the poems then extant. His *Book of Rites* regulates the manners and customs and outward forms of the whole society, and constitutes a part of his moral code. Confucius is described by one of his disciples as wise, affable, condescending, just. Another says, gentle, but inspiring respect; grave, but not austere; venerable, yet pleasing. In the troubles that occurred from the efforts at aggrandizement which the several kings made, he was sometimes in high employ, but once at least a fugitive; but at the close of his long life he left about three thousand followers of his doctrines. The smaller states were annexed by the race

of Tsin, of which dynasty the first emperor was Chy-Hoang, who built the Great Wall. The Chinese have no existing records older than from the time of the race of Chou, in whose reign Confucius lived, and from his time authentic history commences. In the first of his four books, Confucius traces a system of government from that of a family to that of a province, and from a province to a kingdom, making the family tie the foundation of the government. Indeed, the Chinese religion has never advanced beyond a love of parents, obeying and reverencing them while alive, and worshipping them when dead. It is rather a system of morality and moral philosophy, than a religion; and inculcates rather the duties of men to one another, than to a Supreme Being. Their books teach that the true principles of virtue and social order are obedience to parents, elders, and rulers, and acting towards others as they would be done by. They regulate the duties alike of the sovereign and of private families. The Confucian school does not deny the existence of a Supreme Being, but neither defines this fundamental article of every rational creed, nor inculcates the necessity of worshipping the only God. He inculcates polytheism, by enjoining the worship of heaven and earth, the spirits of hills, rivers, winds, and fire; in fact, all nature, except nature's omnipotent God. His doctrines, called in Chinese *Ju-kea-su*, the religion of scholars, is the orthodox creed of the state. To the founder divine honour is paid by all his followers, who are not very scrupulous in worshipping one idol more or less, and have long maintained the most absurd pantheism.

The followers of Confucius are, by some authors, called the sect of *Ju-kea-su*. In reality, the religion, or rather the doctrine of the disciples of Confucius, is positivism. They care nothing about the origin, the creation, or the end of the world, and very little about long philosophical lucubrations. Although the emperor builds and endows temples belonging to the two other sects, the Confucian is the religion of the state, and the court pretend to follow the scheme of ethics and politics laid down by Confucius.

Confucius taught the providential government of an overruling Providence, and that in this world the good are rewarded and the wicked punished. He evidently attached great importance to the solemn public worship of *Shang-te* by the head of the state in person, assisted by his ministers. He said to his disciples that by the ceremonies of the sacrifices to heaven and earth they served God, and by the ceremonies of the ancestral temple they sacrifice to their ancestors. He who understands the ceremonies of the sacrifices to heaven and earth, and the meaning of the several sacrifices to ancestors, would find the government of a kingdom as easy as to look into his palm.

Confucianism does not provide for the spiritual wants and desires of man's nature. He adhered to the worship of heaven and earth as he found it in the classical books of the ancient empire. His moral teaching was far inferior to that of Buddha. He said, 'Thou shalt not do unto others that which thou wilt not that they should do unto thee.' Also, 'Requite injury with justice, and benevolence with benevolence.' But he inculcated the avenging of murder with murder.

His descendants are still numerous in the province of Shan-tung, and have hereditary titles; they and the royal family having this right.—*Gray's China*; *Sirr's China*; *Bouring*; *Bunsen's Godin History*; *Gutzlaff's Chinese History*; *Huc's Christianity*; *Professor E. Douglas, Confucianism and Taoism*.

CONGANI. TAM. In the western parts of Tinnevely, a hood or penthouse, made of reeds, to protect the person from rain.

CONGEA. In the neighbourhood of Moulmein and Amherst, the forest scenery is often ornamented with the numerous large purple bracts surrounding the small inconspicuous flowers of a species of congea. There are three different species in the Tenasserim Provinces, *C. azurea*, *C. tomentosa*, *C. velutina*, all called ka-yau, the same Burmese name. The leaves of *C. villosa* have a heavy smell, and are used medicinally.—*Mason*; *W. Ic.*; *O'Sh.* p. 486.

CONGEE. ANGLO-HIND. Rice gruel.

CONICOPOLY. TAM. An accountant; from Kanika, an account, and Kapila, a collector or supervisor.

CONIDÆ, the Cone family of molluscs, comprising the genera *Conus* and *Pleurotoma*, with several sub-genera.

CONIFERÆ, a natural order of Gymnospermous exogens, called by Dr. Lindley Pinacæ, consisting of resinous, mostly evergreen, hard-leaved trees or shrubs, inhabiting all those parts of the world in which arborescent plants can exist. The following names embrace the better known coniferous plants of Southern and Eastern Asia, with a few of Australia:—

Abies Brunnoniana, *Hook. Him. Journ.*, E. Nepal.
A. dumosa, *Loudon*, Nepal.
A. Smithiana, *Wall.*, Himalaya.
A. Webbiana, *Hook. Him. Journ.*, E. Nepal.
Araucaria Bidwilli, *Hook.*, N. E. Australia.
A. Cookii, *R. Br.*, N. Caledonia.
A. Cunninghamia, *R. Br.*, N. Holland.
A. excelsa, *R. Br.*, N. Holland.
Callitris quadrivalvis, *Vent.*, Algeria.
Cedrus deodara, *Loudon*, Himalaya.
Cunninghamia Sinensis, *Rich.*, China.
Cupressus funebris, *Endl.*, Bhutan.
C. glauca, *Lamb.*
C. sempervirens, *Willd.*, Himalaya.
C. torulosa, *Don*, Himalaya.
Dacrydium elatum, *Wall.*, Tenasserim.
Dammara Australis, *Lamb.*, kauri pine, Norfolk Isld.
D. orientalis, *Lamb*, Amboyna.
Juniperus squintica, *Roxb.*, China.
J. cæsia, *Roxb.*, China.
J. cernua, *Roxb.*, China.
J. Chinensis, *Linn.*, China.
J. communis, *Linn.*, Himalaya, a shrub.
J. dimorpha, *Roxb.*, China.
J. excelsa, *Bieb.*, Himalaya.
J. patens, *Roxb.*, China.
J. recurva, *Hook. Him. Journ.*, Sikkim.
J. squamata, *Don*, Himalaya, a shrub.
J. Wallichiana, *Hook.*, Sikkim.
Larix Griffithii, *Hooker*, Nepal.
Picea Webbiana, *Lamb*, Himalaya.
 var. a. Pindrow.
 var. b. Khutrow.
Pinus excelsa, *Wall.*, Himalaya.
P. Gerardiana, *Wall.*, Himalaya.
P. Khassiana, *Hook. Him. Journ.*
P. Latteri, *Mason*, Burma.
P. longifolia, *Roxb.*, Himalaya, the chir.
P. Massoniana, *Lamb*, China.
P. Merkusii, *Jungh.*, Burma.
P. Sinensis, *Lamb*, China.
Podocarpus bracteata, *Bl.*, Cachar.
P. latifolia, *Wall.*, Tinnevely.

P. neriifolia, *Lamb*, Sikkim.

Salisburnia adiantifolia, —? China, Japan.

Taxodium nuciferum, *Brogn.*, Japan, Nepal.

Taxus baccata, *Linn.*, Himalaya, Ting-schi of Sikkim.

Thuja orientalis, *Linn.*, Nepal, China, Japan.

The coniferæ of the Himalaya were described by Major Madden in 1846 to 1849.

No order of plants can be named of more general importance to mankind than this. The pitch, tar, resins, and turpentine of commerce are products of the plants of this order. Their timber is known as deal, fir, pine, and cedar; and that known to Great Britain and other parts of Europe is principally the wood of the spruce, larch, Scotch fir, Weymouth pine, and Virginian cedar. The Norfolk Island pine, *Araucaria excelsa*, is an immense tree, rising to 150 feet; the kauri tree of New Zealand, *Dammara Australis*, attains to 200 feet in height. *Pinus Lambertiana*, and *Abies Douglassii* of N.W. America, rise to 230 feet. The seeds of the *Pinus Gerardiana*, *Wall.*, are used as food in Kunawar, as are the cones of the Bunya-bunya pine (*A. Bidwilli*, *Hooker*), by the aborigines of Moreton Bay, Australia.

Thunberg mentions many pines in Japan, and they are numerous in China. In Sikkim and Bhutan there are twelve coniferæ, viz. juniper, yew, *Cupressus funebris*, *Abies Webbiana*, *A. Brunnoniana*, and *A. Smithiana*, larch, *Pinus excelsa* and *longifolia*, and *Podocarpus neriifolia*. Four of these, viz. larch, *Cupressus funebris*, *Podocarpus neriifolia*, and *Abies Brunnoniana*, are not common to the N.W. Himalaya, west of Nepal, but the other eight are common. Of the 13 natives of the N.W. mountains, again, only the following five, *Juniperus communis*, the deodar, *Pinus Gerardiana*, *P. excelsa*, and *Cupressus torulosa* are not found in Sikkim. Dr. Masson mentions the *P. Latteri* as growing in Tenasserim, and Dr. Brandis adds *P. Massoniana*, *Lamb*, and *P. Khassiana*.

Dr. Cleghorn described the following:—

Cedrus deodara, *Loudon*, deodar or Himalayan cedar, Kulu; grows on the north slope of Dhaola Dhar, and in Kullu.
Pinus excelsa, *Wall.*, Kail; grows in Kullu, not in Kangra.
P. longifolia, *Roxb.*, chil or chir; grows luxuriantly on north slopes; timber best at 4000 to 5000 feet.
P. Gerardiana, *Wall.*, edible pine, Nezoa; a few trees across the Dhaola Dhar, near Clasca on the Ravi.
Picea Webbiana, *Lamb*, silver-fir, Tos; the wood is not much valued; shingles are laid on the roofs of houses. *Var. a.* Pindrow. *Var. b.* Khutrow.
Abies Smithiana, *Wall.*, Himalayan spruce, Rai; often 100 ft. high, and 5 ft. in diameter.
Cupressus torulosa, *Don*, twisted cypress; at the head of the Parbati.
Taxus baccata, common yew, Bramhi or Rakhab; in Kullu very scarce.
Juniperus excelsa, *Bieb.*, pencil cedar, Leuri or Suri; on the crest of Dhaola Dhar and in Lahul.

The deodar has not been seen east of Nepal, nor the *Pinus Gerardiana*, *Cupressus torulosa*, or *Juniperus communis*. On the other hand, *Podocarpus* is confined to the east of Khatmandu. *Abies Brunnoniana* does not occur west of the Gogra, nor the larch west of the Cusi, nor funeral cypress (an introduced plant, however) west of the Tista in Sikkim. That the deodar is possibly a variety of the cedar of Lebanon, is now a prevalent opinion, which is strengthened by the fact that so many more Himalayan plants are now ascertained to be European than had been supposed before they

were compared with European specimens; such are the yew, *Juniperus communis*, *Berberis vulgaris*, *Quercus ballota*, *Populus alba* and *Euphratica*, etc. The woods of several of the conifera are called cedars.—*Voigt; Eng. Cyc.* p. 123; *Hooker, Flim. Jo.* ed. 1854, i. p. 256; *Cal. Cat. Ex.* of 1862; *Drs. Brandis, Mason, Cleghorn, and Stewart; Mr. Gamble.*

CONIUM MACULATUM. *Linn.* Hemlock.

Shokran, ARAB.	Spotted hemlock, ENG.
Banji-rumi,	Koneion, GR. of Diosc.
Keerdamann, BOMBAY.	Cicuta, LAT.

Dr. Royle says there is little doubt of this being the *κάνισον* of the Greeks and the *Cicuta* of the Romans; but it must not, from the similarity of name, be confounded with *Cicuta maculata*. *Cicuta virosa* occurs in Kashmir, where it is called *Zahr-gugul*, poison turnip, and *Salep-i-Shaitan*, *Pers.*, or devil's salep. Spotted hemlock is the Shokran of the Arabs, who give Kunium as the Greek name. It is found in Europe, east of Asia, and America. It derives celebrity from being considered to have been used as the Athenian state poison, by which Socrates and Phocion perished. The extract of hemlock is employed as an anodyne in scrofulous or cancerous affections, in rheumatism, neuralgia, and painful ulcerations. *O'Sh.; Royle.*

CONJEE MARAM. TAM. ? A light, red-coloured wood of Travancore, sp. gr. 0.650, used for furniture, etc.

CONJEVERAM, or Kanchi-varam, a town and taluk, in the Chingleput district of the Madras Presidency, in lat. 12° 49' 45" N., long. 79° 45' E., and in 1871 the town had a population of 35,396. It is one of the seven sacred cities of the Hindus in Southern India, and in the time of Hiwen Tshang, in the 7th century, was the capital of the Dravida country, ruled by the Chola dynasty. It was then a great Buddhist centre; subsequently professed the Jaina creed, followed by Hinduism. Two of its Hindu temples are the largest in Southern India; one of them belongs to the Saiva, the other to the Vaishnava sect. During the wars of the Karnatic, the town repeatedly changed hands, was taken by Clive on the 29th August, and again in December 1751, and again in 1752. Since 1758 it has been in the hands of the British. Many Jaina sculptures have been discovered there. The Chola held sway in the south of India from the eighth to the sixteenth centuries, when Sha-ji, the father of Sivaji, totally annihilated every vestige of their once great power. It was one of the most ancient and prolonged of all the Indian dynasties.

CON-MOO. BURM. ? A tree of Tavoy; timber good, used for buildings and boats.

CONNARUS CHAMPIONII. *Thw.* A tree of the central province of Ceylon, growing up to an elevation of 4000 feet.—*Thw.* p. 80.

CONNARUS MONOCARPUS. *Linn.*

Doko-ka-det, . . . BURM. | Radaleya-gass, . . . SINGH.

A tree of Burma, and very abundant in the hot, drier parts of Ceylon.—*Thw.* p. 80.

CONNARUS NITIDUS. *Roxb.* A small tree of Sylhet. In British Burma it is a shrub about ten feet high, very plentiful, especially in the Rangoon districts, and affords an oil-seed of small size, but rich in a sweet oil. *C. paniculatus*, *Roxb.*, is a large timber tree of Chittagoug.—*Voigt; M'Clelland.*

CONNARUS SPECIOSA. *M'Clelland.*

Gwai-douk, . . . BURM. | Kadon kadet, . . . BURM.
Khwa tonk, . . . ,

A large tree, very plentiful throughout the Rangoon, Pegu, and Tounghood districts. Growing in all the forests scattered with tenk. It has a large, heavy, and strong timber, white-coloured, adapted to every purpose of house-building. It is remarkable for the quantity of its seeds, which are of large size, abounding in sweet oil.—*Dr. M'Cl.*

CONNARUS UNIFOLIOLATUS. *Thw.* A moderate-sized tree of the central province of Ceylon, growing at an elevation of 3000 to 4000 feet, rather rare.—*Thw.*

CONNELLY. Four distinguished brothers of this name served in India, Captain Edward Connelly, Captain Arthur Connelly, Captain John Connelly, and Henry Valentine Connelly. Edward was killed at Toolian Durrah (Purwan Durrah?), October 1840; Arthur, the traveller, went on a mission to Bokhara in August 1840, and is believed to have been murdered in prison along with Colonel Stoddard; John was killed at the capture of Kabul in July 1842. Their brother, Henry Valentine Connelly, of the Madras Civil Service, was murdered 11th September 1855, at the instigation of Mopla fanatics.

Captain Edward Connelly wrote on the Physical Geography of Seistan in *As. Jl.* 1839, ix. p. 710; On Figures of Gems and Coins, in *Bl. As. Trans.* 1842, xi. p. 137; Account of the City of Oujain and its Environs, *ibid.* 1837, vi. p. 831; Journal kept in Seistan, *ibid.* 1841, p. 319.

Captain J. Connelly wrote a Report upon Khorasan, *Bl. As. Trans.* 1842, xi. p. 116.

Captain A. Connelly wrote on the White-haired Angora Goat, *Lond. As. Trans.* vi. p. 159; Overland Journey through Persia and Afghanistan to India, *Lond.* 1834, 2 vols.

CONOCARPUS ACUMINATUS. *Roxb.*

<i>Andersonia acuminata</i> , <i>R.</i>	<i>Anogeissus acuminatus</i> , <i>Wall.</i>
<i>A. lanceolata</i> , <i>Rotter.</i>	
Yoong, BURM.	Pashi, Panchi, . . . TEL.
Pachcha manu ? . . . TEL.	

This is a large, very valuable, and plentiful timber tree, growing throughout the southern forests, along with *Conocarpus latifolia*. In British Burma it is almost equal to the *Terminalia microcarpa* in size and the regular growth of its stem. Its wood is reddish-brown, hard and strong, its breaking weight being 262 lbs. A cubic foot weighs 50 to 57 lbs.; and in a full-grown tree on good soil the average length of the trunk to the first branch is 80 feet, and average girth, measured at six feet from the ground, is 12 feet. It sells in Burma at 12 annas per cubic foot. It flowers during the cold season. Its wood is exceedingly like, and fully as strong and as durable, if kept dry, as the *C. latifolia*, but, exposed to the water, it soon decays. It is thus unfit for the marine yard, but is equally fit for house-building when it can be obtained straight, which is seldom the case. But for its weight, it would be most excellent timber.—*Drs. M'Cl. and Brandis; Mr. Rohde's MSS.; Voigt; Roxb.* ii. 443.

CONOCARPUS LATIFOLIA. *Roxb.*

<i>Andersonia altissima</i> , <i>Roxb.</i>	<i>Anogeissus latifolia</i> , <i>Wall.</i>
Dinduga, CAN.	Vellai naga maram, TAM.
Thoura, HIND.	Tella neredu chettu, TEL.
Dawura; Dhowa, . . . MAHR.	Siri manu, . . .
Thoura,	Dhoboo; Nongoliah, URJA.
Dna woo gass, . . . SINGH.	Pooroo,

This large timber tree grows in the Dehra Doon, in the Kenneri jungles, valleys of the Konkan rivers, on the inland Dekhan hills at Chillaim, and on the mountains which separate the Circars from the Nizam's dominions. It grows in Ceylon, to the north of Kandy, up to 1500 feet. It flowers during the cold season, in January and February. Its trunk is erect, straight, varying in length and thickness, the largest being 35 feet to the branches, and about 6 feet in circumference. In Coimbatore the specimens sustained 500 lbs. It also grows in Chittagong. Its timber is esteemed for almost every economical purpose, house-building, shafts, and yokes, is in general use for railway purposes, and it makes very good cabinet furniture. Towards the centre, it is of a chocolate colour. For house and ship building the natives reckon it superior to every other sort, *Pentaptera tomentosa* and teak excepted. Captain Sankey, writing from Nagpur, says it is a white wood with a heart of a dark colour, and somewhat like rosewood. Its average length there is 12 feet, and girth 7 feet. It is so much prized by the natives of Nagpur for axletrees, that but few trees are permitted to attain their proper growth. By all accounts, in Nagpur, about 20,000 axletrees are made from this wood yearly. It is attacked by white ants. It ranks high as a raft timber.—*Drs. Rozb., Gibson, Riddell, Voigt, Wight, Thwaites; Mr. Rohde; Captain Sankey.*

CONOCARPUS ROBUSTUS. *M'Cl.* Caibyah, BURN. A very large and strong timber tree, growing plentifully in the Pegu, Tounghoo, and Prome forests, along with teak. Adapted for fancy work and cabinetmaking.—*M'Cllelland.*

CONRADE of Montferrat, Prince of Tyre, titular king of Jerusalem, was assassinated 29th April 1192 A.D., A.H. 13th Rabi-us-Sani 588, by two emissaries disguised as monks, sent by Sinan. Both Saladin and king Richard of England have been accused of instigating it, but, according to Ibn ul Athir, it was the request of Saladin (Salah-ud-Din) to have both Conrade and Richard destroyed.—*Osborn, Islam.*

CONSERVE OF ROSES, Gulcand and Gul-kandu, consists of rose-petals and sugar mixed in certain proportions, and bruised in a mortar. The conserve of roses met with in the bazars of Bombay is chiefly obtained from Surat. Conserve of violets, 'gulkand-i-banafsha'.—*Faulkner.*

CONSTABULARY has been extensively introduced in British India since the revolt of the Bengal Native Army, and to Sir William Robinson, K.C.S.I., of the Madras C.S., the credit was chiefly due. At the commencement of 1862, the experiment of the introduction of the new Indian was made in the North Arcot district. At the end of 1862 not a taluk or town in the entire length and breadth of the Presidency remained unoccupied by the new constabulary.

CONSTANTINOPLE, the capital of the Turkish dominions, which extend to the shores of the Indian Ocean. It is known to the Mahomedans of Asia as Konstantinia, also as Rum, and the emperor is called the Sultan, also the Kaiser.

CONTI. Nicolo Conti, a noble Venetian, who travelled in S.W. Asia and in the East Indies between A.D. 1419 and 1444, and on his return, on seeking absolution from Pope Eugene IV. for having in Egypt denied Christ to save his wife

and children from death, the penance was imposed on him of relating his adventures to Poggio Bracciolini, the pope's secretary. Conti left Damascus and passed through Bussora, Baghdad, Ormuz, Cambay, Malabar, Bijanagar, Mylapur, Ceylon, Sumatra, Tenasserim, Ava, Arakan, Bengal, Java, Banda, Ceram, Bouro, Cochinchina, and returned by way of Cochinchina, Malabar, Cambay, Aden, and Cairo.

CONTINENTS. In Hindu geography, the continents connected with each other are four, viz. Uturukuru, Purwawidessa, Aparagodana, and Jambudwipa.

CONTINGENT, a term applied in British India to designate the armies which, by treaty, the feudatory sovereigns keep. The Mysore contingent of 4000 soldiers has been enrolled since the treaty of Seringapatam. The Nizam of Hyderabad's contingent of 7498 men, in six regiments of infantry, four of cavalry, and four batteries of artillery, was established by the treaty of 1798. The contingent of H.H. the maharaja Sindia, of 5000 cavalry, whose capital is Gwalior, was arranged for by the treaty of Gwalior of November 1817. In the same year a contingent of 800 men was arranged for from the Gaekwar at Baroda. The treaty of Bhopal of February 1818 provided for a contingent of 600 cavalry and 400 infantry; and by the treaty of the 6th January 1818, maharaja Man Singh of Jodhpur undertook to furnish 1500 cavalry for service with the British Indian army. The Indore contingent of 3000 cavalry horses by the maharaja Holkar, by the xi. article of the treaty of Mundesur, was agreed to be provided ready for service. See British India, p. 464.

CONUS, the Cone genus of *Gasteropodus* *Mollusca*, founded by Linnaeus. The species are found in southern and tropical seas. Lamarck records 181 recent species and varieties. *C. textilis*, *Linn.*, found at Ancyum of the N. Hebrides, bites and injects a poisonous acrid fluid into the wound, occasioning the heart to swell, and often endangering life.

CONVENT OF ST. CATHERINE is on the Jib'l Musa.

CONVOLVULACEÆ. *R. Br.* The bindweed tribe of plants, in which there are about 28 genera and more than 450 species in the west and east of Asia. The more important genera are *aniseia*, *argyria*, *batatas*, *Blinkworthia*, *Breweria*, *calonyction*, *calystegia*, *convolvulus*, *cressa*, *evolvulus*, *Havittia*, *ipomœa*, *Moorecroftia*, *neuropeltia*, *pharbitis*, *porana*, *quamoclit*, *rivea*, *sepistemon*, *Skinnera*.

Convolvulus arvensis, *Linn.*, Corn bindweed.
C. chinensis, *Ker.* | *C. Maloolmi*, *Rozb.*

It is native throughout Europe in sandy fields and by-roads, also in China, Persia, and some parts of India; is abundant as a weed all over the plains of the Panjab, and up to 10,000 feet in the Panjab Himalaya. The official *hirn-padi* (deer's foot) appears to be from this plant. It is said to possess a purgative quality, as also *C. soldanella*, *C. maritimus*, and *C. macrocarpus*.—*Stewart.*

Convolvulus pluricaulis, *Chois.*
Porprang, Baphali, HIND. | *Gorakh panw*; *Dodak*, HIND.

Common throughout the Panjab plains. It is eaten by cattle, and is reckoned cooling; used as a vegetable, or given in sherbet.—*Stewart.*

Convolvulus reptans, *Olus vagum*, *Rumph.*
Kulmi shak, . . . *BENG.* | *Po-ts'ai*, *Po-ling*, . . . *CHIN.*
Mandavalli, . . . *CAN.* | *Tootsu kura*, . . . *TEL.*

A native of standing sweet waters, very common in India; affords a milky juice, which, when dried, is nearly equal to scammony in purgative efficacy. The tops and leaves are eaten in stew by the natives. This is largely cultivated in China as a vegetable, and eaten in spring.—*Ainslie*; *Smith*.

Convolvulus scammonia, *Linn.*
Sakmunia, *Sagmoonia*, *Ar.* | *Mahmudab*, . . . *HIND.*

A native of Syria, the Levant, and of Kaira in Gujerat. The proper juice when dried is called scammony, but is often adulterated with concrete juices of a similar kind, and with flour, chalk, sand, and earth. The most abundant harvest of scammony is in Smyrna and Aleppo. There are several modes of collection, which give rise to corresponding commercial varieties. The Arab name of this drug, *Ul Sugmoonia*, signifies the purgative.—*O'Sh.* pp. 500, 501.

CONWAY, an officer of the Madras army, who rose to the rank of Colonel. He was selected, while quite a young man, to be Adjutant-General of the army of Madras at a time of trial, when the European officers had become disaffected, and he held that post up to the year 1837, when he died of cholera on the banks of the Kistna, en route to be Brigadier of the Hyderabad subsidiary force, and he was buried there. In St. Mary's Chapel, Madras, is a tablet to his memory:—

The Soldier's Friend,
 CONWAY,
 Adjutant-General,
 obiit
 13th May 1837.
 Erected by the
 ARMY
 and by the
 PUBLIC.

COOCH BEHAR. See Kuch Behar.

COOKIA PUNCTATA. *Retz.* Wham-pi fruit.
Quinaria lansium, *Lour.* | *Hwang-pi kwo*, . . . *CHIN.*

This fruit-tree of China and the Moluccas is middle-sized, bearing an edible fruit about the size of a pigeon's egg, yellow on the outside, with a white pulp, rather acid, but sweet, and much esteemed in China and the Archipelago. *Hwang-pi*, or *wham-pi*, means yellow skin. In India it bears its rough-skinned fruit in April and May. The tree has very dark green shining leaves.—*Roxb.*; *Voigt*; *Riddell*; *Smith*; *Macfadyen*.

COOKING WAGGONS are constructed somewhat like a battery caisson, so that the parts can be unlimbered and separated from each other. The 'limber,' or forward part, bears a large chest, which is divided into compartments, to contain coffee, tea, sugar, and corn starch, with a place also for two gridirons and an axe. From the rear portion rise three tall smoke-pipes, above three large boilers, under which there is a place for the fire, and under the fire a box for the fuel. Each boiler will hold fourteen gallons; and it is estimated that in each one, on the march, ten gallons of tea, or coffee, or chocolate, could be made in twenty minutes,—thus giving ninety gallons of nourishing drink every hour.

COOLEE, a term in use in British India to designate any labouring man working for hire, also the hire itself. The word is a corruption of the Tamil word *Woleeya* or *Wozheeya*, *Karan*, a servant. Under this designation great numbers

of the labouring classes of India have emigrated to Ceylon, the Mauritius, Bourbon, and the West Indies. The mortality on the voyages at one time was so considerable, ranging up to 19 per cent., that emigration agents were appointed at the Indian ports, under Acts of the Council, to control the emigration. *Coolee bandy* or *Coolee gari* means a hired carriage.

COOLEN or Kulang. *HIND.* The *Grus cinerea* of British India and of Europa. It is much liked as a table bird. They are easily domesticated.

COOLING MIXTURES.

Nitrate of ammonia, water, each 1 part,—46°.
 Nit. of ammonia, carb. of soda, water, each 1 part,—57°.
 Phosphate of soda, 9 parts; sulphuric acid, 4 parts,—62°.
 Sulphate of soda, 8 parts; muriatic acid, 5 parts,—50°.
 Sulph. of soda, 5 parts; dilute sulph. acid, 4 parts,—47°.
 Phosphate of soda, 9 parts; nitrate of ammonia, 6 parts; dilute sulphuric acid, 4 parts,—47°.

The fall of the thermometer is here calculated from 50°, and the full effect is not produced unless the materials employed and the substance acted upon be previously cooled to that point.

Pounded ice or snow, 2 parts; common salt, 1 part,—from any temperature to 5°.
 Snow or pounded ice, 12 parts; common salt, 5 parts; nitrate of ammonia, 5 parts,—25°.
 Snow, 3 parts; dilute sulphuric acid, 2 parts,—from 32° to 23°.
 Snow, 8 parts; muriatic acid, 5 parts,—to 27°.
 Snow, 7 parts; diluted nitric acid, 4 parts,—to 30°.
 Snow, 4 parts; muriate of lime, 5 parts,—to 40°.

—*O'Sh.* p. 46.

COOMPTA, in lat. 14° 26' N., long. 74° 27' E., is the chief commercial town in the Canara district.—*Imp. Gaz.*

COONCHIEE. *HIND.* A child's cloak.

COONDOOR. *DUKH.* Frankincense.

COONNOOR, in lat. 11° 20' N., long. 76° 50' E., S.E. of Ootacamund, is 5960 feet above the level of the sea. The mean height of the adjoining Jakatalla cantonment, now called Wellington, is 6100 feet. It is a favourite sanatorium for Europeans.—*Baik.*; *Schlag.*

COONR-MOONDLA, or *Cunr-mundla*, is the name given at Benares to the day on which seed-sowing is concluded. In the Lower Doab and Baiswara, it is generally called *Coonr Bojee* and *Huriur*. Hindus devote this day to festivity, and, amongst other ceremonies, decorate the ploughs, and make the residue of the seed-corn into a cake, which is partaken of in the open field, and in part distributed to Brahmans and beggars. A similar practice prevails in Great Britain, when the seed-cake and furmenty of All-Hallows are in request. In Tusser's homely verses we read,—

'Wife, sometime this week, if the wether hold cleare,
 An end of wheat-sowing we make for this yeare,
 Remember you, therefore, though I do it not,
 The seed-cake, the pasties, the furmenty-pot.'

—*Elliot*. See *Duleājhar*; *Huriur*; *Hurpoojee*.

COOPER, SIR FREDERICK, K.C.S.I., a Bengal civil servant, who did much good service in the Panjab during the revolt and rebellion of 1857–58.

COORBAN. See *Kurban*; *Sacrifice*.

COORG, a British province between lat. 11° 56' and 20° 50' N., long. 75° 24' and 76° 18' E., area 1580 square miles, and, in 1881, a population of 178,802, of whom 100,489 were males and 77,868 females. Its prominent inhabitants are the Kodaga or Coorg mountaineers, who were ruled over by the Haleri polygars; but Vira Rajendra, the last raja, was dethroned by the British in

1834, and he died in Britain in 1862. The Kodaga had successfully opposed Hyder Ali and his son Tipu; but Vira Rajendra (Dodda), who died in 1809, was guilty of about 5000 summary executions; his successor, Linga, died 1820, was greedy, cunning, and cowardly. The aspect of Coorg (Kurg or Kodaga, meaning steep mountain), presents an entire forest; the long and narrow cultivated valleys enclosed within it serve but to render the vast woods more striking. The country is intersected in every direction by cuddings or breast-works, estimated at 600 miles in extent, many 12 feet deep and 10 or 15 feet across the ditch. They cross the ranges of hills and each other with little appearance of order, and defy conjecture as to their object. The prevailing languages are Coorg, Kodaga, Canarese, Malealam, Tamil, Tulu, Hindustani, and English. There are about 40,000 native Coorgs (Kodaga) scattered throughout the country. They are a tall, muscular, broad-chested, well-favoured race of mountaineers, far superior in physique to the inhabitants of the plains, whom they greatly despise. They are far advanced in civilisation, and very intelligent. The vice of drinking has a deep and widely-spread hold upon them. They marry at a ripe age, but the wives of brothers are considered as common property. They generally retain the old devil-worship of the Dravidian race. The raja's palace is supposed to have been built by an Italian, who is said to have been bricked up in a wall as soon as the building was finished. The tribes and races of the population in 1881 was 178,302 souls, comprised, besides the Coorg or Kodaga proper,—

Amma or Amma Kodaga or Kaveri Brahmans.
 Aimbulu, goats or herds.
 Higgade, cultivators.
 Ainaya Badage, artisans in iron and wood.
 Kavati, jungle cultivators.
 Paleya, farm labourers from the Tulu and Maleala districts.
 Kurubar, two tribes, the Jenu and Bettu.
 Yerawa, slave emigrants from Malealam.
 Meda, umbrella makers.
 Holeya, viz. Koinbati Holeya, who speak Kodaga, and Badaga Holeya, who speak Canarese.

There are also some Malrattas, Rajputs, Rache-war, and Rajpinde, the last being connections of the late rulers. The out-castes number 34,100, and the wild tribes 14,783.

In 1837 there was a rebellion in the British district of Canara, adjoining Coorg. The Coorgs at once marched there, quelled the rebellion, and recaptured for the British the treasures carried off by the insurgents. The Governor-General directed that the recovered treasure should, as a reward, be divided amongst the Coorgs, but they to a man refused to receive it, and proudly declared that they had not fought for loot. The British Government, awakened to a sense of the spirit of these rude warriors, then directed jaghirs and oomli lands to be conferred on them, and presented their chiefs with horses, rifles, khillats, and other marks of honour. Later still, when British supremacy in India had been shaken to its foundation, a body of Coorgs, armed to the teeth, suddenly made their appearance at Periyapatna in Mysore, under the secret instructions of the late Sir Mark Cubbon, and by their presence tended to suppress the growing insolence and disaffection of the Mahomedan classes of Seringapatam and the adjacent parts of that province.

In the vicinity of the palace are settled the descendants of the private guards and executioners of the rajas. These men are called Kapalarus, and were the principal instruments in carrying out the mandates dictated by the last raja. The Amma Coorg, the Sanna Coorg, the Malla Coorg, and the Boddhu Coorg differ chiefly in the matter of marriages. The right of choosing a husband for the girl vests with her father. Should he have demised, it devolves in succession upon her paternal grandfather, mother, and brothers. In their absence, on the head of the house, whoever he may be. There are only two kinds of marriages amongst the Coorgs,—the Brahman, based on disinterested motives, and which is not brought about on account of pecuniary considerations, and the Gandharva, which is founded in reciprocal desire. The former is the more prevalent. A Coorg is justified in taking to himself a plurality of wives, supposing his first one for the period of ten years produces only daughters. Re-marriage of women is permitted, under certain restrictions. In the event of there being no male issue in a house, a daughter is retained to represent the name, and a husband is procured for her from another house. This husband does not become alienated from his own family, but can take a wife for his own family also, thus raising up seed for both houses. These marriages must take place for the purpose expressed at the time, and the arrangement cannot be made after marriage. This is termed amongst the Coorg a Makka Parje marriage, or for the rights of the children. Their women have large eyes, and are not very dark. Their hair, *en chignon*, has splendid gold ornaments on it, and bunches of white flowers. White jackets with short sleeves, embroidered with red cotton, with muslin skirts embroidered with a narrow gold lace, and very short. Their legs and feet bare; round their ankles massive silver bands, from which hang a number of little bells, with a silver chain from the band to each toe, holds a number of rings. Their arms covered with bracelets, and round their necks a number of gold chains with jewel ornaments. In their national dance Coorgs form into a circle. The first figure of the dance is called Balakata, and is a slow movement, the men all dancing round, singing, and gracefully waving about chowris (long whisks of hair), with an accompaniment of drums. This is followed by the second figure, called Kolhata, or stick dance, in which each man is provided with a couple of sticks. They all move round as before, beginning slowly, with a sort of prancing step, which gets quicker and quicker. They keep tapping their neighbours' sticks in time, getting more and more excited and hitting harder, as if they were to have a fight, but at a given signal they all instantly stop. The third figure consists of a single combat. One man leaps into the circle with a war-whoop, armed with a long switch and a metal shield, challenging the ring. Then out springs another, and both dance. At last they rush together, hitting hard. The laws of the game do not allow hitting above the knees, although some, in their excitement, certainly transgress. The ankles, however, suffer most, and must smart terribly after an encounter. When one of the combatants gives in, the other embraces him, to show there is no ill-will. At the end of the third figure, the assembly dance,

leaping vigorously into the air. The Coorg or Kodaga language has been regarded as Canarese, modified by the Tulu. But Mr. Moegling states that it is more nearly allied to the Tamil and Malenlam than to the Canarese. Cairns or tumuli are in great numbers. They conceal kistvaens. There are also Kolle Kallu, or sculptured tombstones in honour of warriors slain in battle. Raja Vira Rajendra's daughter Gauramma, whom he brought with him to London, was baptized as Victoria, Queen Victoria being the sponsor, and she married a British army officer, but shortly after he and her daughter disappeared, and she died in 1864. —*Cole's Coorg; Bowring's Eastern Experiences; Rice, Coorg; Coorg Gazetteer; Moegling's Coorg.*

COORMEE or Koormee, a race of cultivators under the different names of Coormee, Kumbhi, Kunabi, Koombhee, extend throughout the greater part of Hindustan, Berar, and the Western Dekhan. They are famous as agriculturists, but frequently engage in other occupations. The Coormee women, like the Jatni, assist the men in husbandry, and have passed into a proverb for industry, —

'Bhulee jat koonbin kee k'hoorpee hat'h
K'het nirawen apne pee ke sa'h.'

The Coormee of the provinces are said to have seven subdivisions, which are usually enumerated as K'hureebind, Puturya, G'horchurha, Jyswar, Canoujea, Kewut, and Jhooneya. —*Elliot*, p. 227.

COOROOKOO OIL, oil of prickly poppy, or Jamaica yellow thistle, pale yellow, limpid oil, from the round corrugated seeds of the *Argemone Mexicana*, is sometimes expressed by the natives and used in lamps, but is doubtless adapted to more important uses. —*Madras Ezr.* 1855.

COOROOMBAR or Kurumbar, properly Kurnbar, a shepherd, from the Canarese Kuru, a sheep.

COOROOMBAR, a race of Wynad, very docile, quick of imitation, and slavishly submissive to their moodily or head, who exercises undisputed power over his own family, numerically containing about twenty or thirty beings. Those employed by the coffee-planters are a little civilised, appreciating the comforts of life in a slight degree higher than their more savage brethren. They erect rude huts for themselves and family, on elevated ground, surrounded by jungles, and about six in number; they touch one another, and the whole present the form of a crescent. One larger than the rest, styled the cutcherry, is erected in the middle, in the shape of a hall, for the sojourn of casual strangers; it is dedicated to their village deity, and the place cannot be contaminated by a shod foot. The presence of a suspected stranger in their vicinity, sickness, or other trifling but natural cause, make them emigrate from one place to another, sometimes miles away, but always preferring lonesome localities and dense jungles. Some are partly civilised. Government possess some forest lands towards Periah and Teriate, and in several spots over Wynad. In the teak belt are several bands of Cooroombars, some of the Jani, and others of Moolly clan. The former live entirely in the forest. They are the only axe men, and without them it would be difficult to work a forest. Other tribes are the Panniar, Pular, Gurchea, Chetty, and squatters. The Cooroombar, through their headmen, are held responsible, and the Chetty are also responsible for their Panniar or farm slaves. The

Cooroombar's services are constantly called for by the wood contractor and the planter. They will not leave their haunts in the forests for any time. During the gold speculations of the western coast from 1876 to 1881, the Cooroombar were found useful labourers. —*C. H. S. in Newspaper; Cleg-horn, Forest Report.* See Kurumbar.

COOROOMBRANAAD, a district of Malabar.

COOROOMINGA. TAM. A beetle, the *Butocera rubus*, which penetrates the trunk of young cocoanut trees near the ground, and deposits its eggs near the centre. The grubs eat their way up and destroy the tree.

COORTALLUM, not very far from Cape Comorin, is a large place, with several bungalows close into the hills. Of the cataracts close at hand, the lowest falls from a height of 200 feet. The scenery is splendid. There are in all three falls, the highest being 2000 feet above the sea. The average temperature of the water is 72° to 75°, and invalids derive great benefit from bathing in it. The bathing place is under a shelving rock, affording the most delightful shower-bath possible. The climate is particularly enjoyable to Europeans in June, July, and August.

COOSSUMB. SANSK. *Carthamus tinctorius*.

COOSY, a tributary to the Hoogly, also written Cusi and Kosi. It rises in the Ramghur district, lat. 23° 35', long. 85° 58', runs S.E. into the Hoogly. Its length is 240 miles.

COOTANAD, a district of Malabar.

COOTE, SIR EYRE, K.C.B., a distinguished British officer, who served in India from the middle of the 18th century, and in command in the Karnatic from 1759 during the contests for supremacy between the British and French. At the battle of Plassey in 1757, while a Major in rank, he had commanded the third division of the army, and he seems to have taken command in the Karnatic in 1759. He was out-manœuvred on the Palar river, but in 1760, after defeating Lally at Wandiwash, and driving him back to Pondicherry, he took easy possession of Cuddalore in April 1760, of Chellumbrum, and other French garrisons. He took Pondicherry on the 4th Jan. 1761. The French shortly before had destroyed Fort St. David, and in retaliation Coote razed the fortifications to the ground. On the 18th June 1781, Colonel Coote had been repulsed with loss by Hyder in a night attack on Chellumbrum. After forcing his way through two or three enclosures, and when falling back to Cuddalore, and he had passed on a few miles from Porto Novo, he found his march intercepted by the whole army of Hyder Ali, 60,000 strong. Hyder had made a rapid march, and had thrown up batteries across Coote's line of retreat; he had his left protected by a range of sandhills, and his right by the sea. Coote made two determined assaults, one on the batteries, which were carried, the other through a passage in the sandhills left unprotected by Hyder, whose flank became thus exposed. A war schooner at the same time appeared in sight, and, anchoring close in, poured her broadsides on the enemy, causing great confusion. Hyder's army was completely routed. Coote's strength was 7878 men, including artillerymen. It was known as the battle of Metapolim, and was fought on the 1st July 1781. In June 1782, while Coote was advancing rapidly on Arnee, where Hyder had treasure and military stores, Hyder overtook and

compelled him to return to Madras. Coote died in 1783, and the command of the army devolved on General Stewart.

COPAIVA or *Copaiba* is the fluid resinous exudation of several species of *Copaifera*, of *C. Langsdorffii*, *Dec.*, of *C. officinalis*. It was first described by Marcgraaf and Piso in 1643. Species of *dipterocarpus* yield a substance closely resembling *copaiba*.—*Faulkner*; *Royle*, p. 364.

COPAL, Pa-ma-yu, CHIN., Chandras, HIND. This very important resin is obtained from trees of America, Africa, Madagascar, India, and Australia. It exudes spontaneously from *Rhus copalinum* and *Elaeocarpus copalifer*, the first being an American and *W. Indian*, and the second an *E. Indian* tree. Another copal is obtained from the coasts of Guinea; and several species of *Hymenaea*, on the Amazons, are said to produce kinds of copal, one of the plants being *Hymenaea verrucosa*. *Vateria Indica* furnishes the resin called in India copal, which in England is known by the name of gum anime, and very nearly approaches the true resin of that name; in its recent and fluid state it is used as a varnish, called Piney varnish, in the south of India, and, dissolved by heat in closed vessels, it is employed for the same purpose in other parts of India; it is extremely tenacious and solid, but melts at a temperature of 97° Fahr. Mineral copal is found in ligniform pieces near Quilon, under laterite. A copal, called gum anime in the London market, is found on the east coast of Africa, from Panjan to Mboamaji. An endless supply is obtainable there, and it is largely imported into Bombay from Zanzibar, the major portion being re-exported to England, and occasionally to France and Calcutta. The copal of Zanzibar is obtained from the *Trachylobium Hornemanianum*; but larger quantities are found imbedded in the earth, often where no copal-yielding trees now exist. This semi-fossil copal is called copalline. Specimens of the leaf, flower, etc., obtained from the semi-fossil gum, agree in all respects with those of the living tree. The peculiar and more valuable properties of the buried gum anime are supposed to be from a chemical action, the result of a long retention in the earth. It is classed as raw or jackass copal, and ripe or true copal. The value of the latter is estimated by its colour, the clearest and most transparent pieces bring the highest prices, after them the light amber, lemon, dark yellow, and red. Sometimes the gum, like amber, contains drops of water, bees, flies, and other insects. The diggers do not excavate more than the depth of a man's waist, and the copal occurs in a red sand underlying blue clay.

Copal is generally imported into England in lumps about the size of small potatoes, of a slightly yellow tint, and often including insects and animal remains. It is often covered with a clay-like substance, from which it is freed by the dealers by scraping. The finest and palest lumps are selected for what is called body-gum; the next best forms carriage-gum; and the remainder, being freed from wood and stones, forms what is called third, or worst quality, and is used for gold-size or japan-black. Fracture conchoidal; it is transparent, and tasteless. Copal is liable to be confounded with anime, when the latter is clear and good; but the solubility in alcohol fur-

nishes a useful test,—the anime being readily soluble in this fluid, while copal is sparingly so. Copal is also brittle between the teeth, whereas anime softens in the mouth. The American copal occurs in commerce in flat fragments; whereas the East Indian is generally obtained in roundish masses. The latter furnishes the finest varnishes.—*Dr. Kirk*, in *Madras Agri-Horticult. Proc.*

COPALM BALSAM is a product of the Liquid-amber *styraciflua*.

COPAL VARNISH is a solution of copal gum resin in linseed oil, oil of turpentine, spirits of wine or alcohol; it is used for japanning snuff-boxes, tea-boards, and similar articles. Copal varnish and amber varnish are also much employed by the artist and by the photographer for the preservation of their works. Fresh essence of turpentine dissolves copal completely, but old turpentine will not do so. It is stated that essence of turpentine, digested upon sulphur, will dissolve double its own weight without letting any fall. The oil of rosemary also dissolves copal with great readiness. An excellent varnish may be made by dissolving one part of copal and one of essence of rosemary, with from two to three parts of pure alcohol.

COPAULDROOG, taken by the British, by storm, on the 14th May 1819.

COPE, HENRY, wrote on *The Ruined City of Ranade, Sindiab's Dominions*, in *Bl. As. Trans.* 1848, xvii. p. 1079; On the *Ruined City of Ferozabad*, *ibid.* 1847, xvi., 1848, xvii. p. 971; On the *Silk Manufactures of the Panjab*, *Laboro Agri. Trans.* 1852.

COPHONES of Arrian, supposed to be the Kabul river.

COPPER.

Nehass,	ARAB.	Cuprum,	LAT.
Ky-a-ni,	BURM.	Tambaga,	MALAY.
Chi-tung; Tung,	CHIN.	Mias,	PERS.
Tze-jen-tung; Chi-kin,	DAN.	Miedz,	POL.
Kobber,	DUT.	Cobro,	PORT., SP.
Koper,	FR.	Krasnoimjed; Mjed,	RUS.
Cuivre,	GER.	Tamraka; Tamra,	SANSH.
Kopper,	Guj.	Kopper,	SW.
Tamba,	HEB.	Shombu,	TAM.
Nehesh,	IT.	Tambram; Raggi,	TZL.
Ramo,			

Copperore is abundantly diffused in nature, being found native as an oxide, a sulphuret, a sulphate, carbonate, arseniate, and phosphate, in Persia, Baluchistan, Nepal, Kashmir, Tibet, India, Sumatra, Borneo, China, and Japan. Copper ore in the form of sulphuret is abundant in Ramgurh in Shekawatti. Near Ajmir, carbonate of copper is found in small veins, and in connection with ores of iron (*Genl. Med. Top.* p. 169). A silicate of copper occurs in Nellore and Ongole, but not in workable lodes. Copper ores are found in the Jeypore dominions, and in the vicinity of Nejeebabad, Nagpur, and Dhunpur. Copper has been pointed out near Beila, in the province of Luz, on the western frontier of Lower Sind, by Captain Del Hoste and Captain Harris; in Kamaon, by Lieutenant Gasford and Captain Duraud; at Porkee and Dhanpur, by Captain Richards; at Almorah and in Afghanistan, by Captain Drummond. It is said to have been worked in Cutch.

From Gurgoon there was sent to the Panjab Exhibition a piece of copper pyrites, also specimens of good copper ore from the Hissar district, and of the metal got from it; from Pelang in Kulu,

and from Manikarn near Kulu, in the Kangra district, some copper pyrites, and with blue carbonate of copper from Spiti. Copper is found in Kashmir, but is not an article of trade.

Iron and copper mines occur at Marma, S.E. of Byans, and the people bring copper pots to barter with the Chaudansi and Byansi races. Copper mines in Kamaon, Garhwal, Nepal, and Sikkim, are worked by the natives on a small scale.

Copper has been discovered in Singhana; in mines in Kamaon and Garhwal. Copper mines occur at Papulee, Pringlapanni, Murbuggettee, and old mines at Kerraye, Belar, Raie, Seera, Toma Cottee, Doberee, and Dhunpore. The *Beng. As. Soc. Journ.*, No. 1 of 1851, p. 1, mentions the copper of Deoghur or Byjnath, a small town in zillah Birbhum. The surface veins run east and west, and present the ore in irregular masses of $\frac{3}{4}$ ths of an inch broad, so much corroded by atmospheric influence as to appear in a soft, friable, red, yellow, and liver-coloured or garnet-coloured earth; but, upon digging a couple of feet below the surface of the ground, the veins become a compact liver-coloured mass, spangled with shining particles of copper; the whole enclosed in a soft, friable apple-green, yellow, or white felspathic rock. Traversing the copper from north to south, small veins of lead appear, which occasionally form the containing walls to the copper. Mr. Vincent traced the vein of copper for about 100 feet east and west, and dug to the depth of 2 feet only. With the aid of coal dug from Banslee Kullah in the Rajmahal hills, he smelted some of the ore, which gave a return of 30 per cent. of good copper; inferior specimens, mostly water-worn pieces picked up on the surface, gave 25 per cent.

The mountainous parts of Nepal are rich in mines of iron and copper. The produce of the former is smelted. The copper is of a very superior kind, and was at one time preferred for consumption in the territories of the king of Oudh to that exported from Britain.

In Singhbhum, copper ore is found extending over 80 miles to the westward of Midnapur. Three slabs, weighing about 139 lbs., were subjected to lamination, and proved to be well suited in all respects for purposes of coinage. The quality of this metal is decidedly superior to imported copper.

The copper ore of the Nellore collectorate of the Madras Presidency, was called by Dr. Thomson an anhydrous carbonate of copper, containing 60.73 per cent. of black oxide of copper. It occurs in hornblende schist at Bungeral Mettah, and the carbonate, passing into malachite and mountain blue there, and at Gurumany Pentah, Saligherri, and Yerrapully.

The existence of copper ore in the Callastri, Venkatagiri, and Nellore districts, was ascertained by Dr. Heynes about the year 1797, and he described that of Wangapadu.

Copper ore is found about 20 miles east of Kurnool, about 2 miles from the village of Gunny, in the centre of a low range of hills; also at Sidhout and Badwail.

Dr. Helfer said that the copper on the Lampei islands is worthy of attention. Mr. O'Riley stated that the copper ore from several islands of the Mergui Archipelago, is the grey copper ore, containing from 40 to 50 parts of the metal, in combination with antimony, iron, and sulphur. Dr. Mason had a fine specimen of the green carbonate,

or malachite, found near the headwaters of the Ataran; and natives assured him that the same mineral exists up the Salwin. He had also seen specimens from Cheduba, near the coast of Arakan.

Copper is found in the Shan States, also at Kolen-myo and Sagaing; at Bawyne and Kolen-myo the malachite appears to be of a rich description, and the deposits seem to be abundant. The Sagaing mines were worked in former times by Chinese. The surface ore is not promising. Most of the copper used in Upper Burma is imported from China. It is plentiful in the province of Yunnan. Serpentine mines are said to occur at the Ura river, about 45 miles north and 80 west from the modern town of Moun-goung, in native Burma, and about 30 miles from Seesagur in Upper Assam; carbonate of copper was, however, mistaken for it. But the serpentine rocks above Bamo appear to imbed oxides of copper. Copper and antimony occur in Shwe-green, and in the hill confines of Tounghoo.

Copper ores have been found in Sumatra? Celebes, and Timur. In the two former, mines of it are said to be worked.

Copper abounds throughout the whole Japanese group, and some of it is said to be not surpassed by any in the world. The natives refine it; and cast into cylinders about a foot long and an inch thick. The coarser kinds they cast into round lumps or cakes. Quicksilver also is said to be abundant. Lead also is plentiful. Tin in small quantities, and of a quality so fine and white that it almost equals silver. Iron is found in three of the provinces, of which they make steel unsurpassed in excellency. The copper ore found in Japan contains gold in alloy; it occurs in the market in small red bars, six inches long, flat on one side, and convex on the other, weighing 4 or 5 lbs. each; this copper is the most valuable of any found in Asia. The Chinese and Dutch exported upwards of 2000 tons annually.

A natural alloy found in China, known under the name of white copper, is used in great quantities. It seems peculiar to China, and was supposed by Dr. Black to owe its distinguishing colour to an alloy of nickel (*Ains. Mat. Med.* p. 53). It is used for dish-covers, candlesticks, tripods, plates, etc., which, when new and polished, look almost as well as silver.

Copper ores have been found as long ago as 1802 at Port Curtis, near the southern extremity of the range which extends along the north-east coast of Australia. Flinders met with indications of copper at Good's Island in Torres Strait. Lead and copper mines have been worked in South Australia for some years past, and others have been opened recently in the western coast range, a little to the north of Swan River. Hematitic and specular iron ore and copper pyrites have been found on the north-west coast near Admiralty Gulf.—*Kinneir's Geog. Memoir*; *McCulloch's Dict.*; *Piddington in B. As. S. J.*; *Craufurd's Dict.*; *Mason's Ten.*; *Irvine's Ajmir*; *O'Sh. Beng. As. Soc. Tr.*, 1841 to 1844; *Heyne's Tracts, Bomb. Geog. Soc. Tr.* vi. 117; *Friend of India*, 28th Feb. 1850; *Flinders's Voyage*; *Powell, Handbook*; *Smith, Nepal*; *Smith's Report on Singrowlee*.

COPPER, ACETATE OF.

Theng-twa, . . .	BURM.	Taibembaga, . .	MALAY.
Pitra,	HIND.	Zangar,	PERS.
Senan,	MALAY.	Vangala patchi, .	TAM.

COPPERAS.

Acetate of copper (arugo, verdigris) is a common bazar article in India, and is prepared on a large scale, by strewing copper plates with grape husks or tamarind pulp. During the fermentation of the traces of sugar in the husk, the copper combines with oxygen, and the oxide with acetic acid formed by the grape sugar. The process is extremely tedious.—*Beng. Phar.* p. 324.

COPPERAS, T'sing-fan, CHIN., an impure sulphate of iron.

COPPER PASTILLES. Pastilles containing sulphate of copper, when burned, destroy bugs, mosquitoes, and fleas, using three or four in a day.

COPPERSMITH is the small green barbet, *Megalaima viridis*, *Gmel.* (*Xantholema Indica*), common in the Peninsula of India. It generally perches on the top branch of a tree, and the sound of its voice is Took, took, took, continuously, almost identical with that produced by striking a metal vessel.

COPPER, SULPHATE OF. Blue-stone.

Dok-ta-taha, . . .	BURM.	Kupfer Vitriol, . . .	GER.
Shih-tun, Tan-fan, CHIN.		Tutiya, Nila tutia, HIND.	
Tung-lo, . . .		Cupri sulphas, . . .	LAT.
Sulfate de Cuivre, . . .	FR.	Turushu, Nila tutam, TAM.	

This salt is produced naturally in the water of copper mines, and is manufactured in many parts of India and the eastern islands. It is easily prepared, by heating copper to redness in contact with the air, removing the black scales which form, and dissolving these in dilute and boiling sulphuric acid, and crystallizing. In the refining of silver it is incidentally prepared in very large quantities (*Beng. Phar.* p. 322). It is much used in dyeing operations, in the printing of cotton and linen, and for various other purposes in the arts. It has been employed to prevent dry-rot by steeping wood in its solution, and is a powerful preservative of animal substances; when imbued with it and dried, they remain unaltered. It is obtained by the decomposition of copper pyrites, in the same manner as green vitriol from iron pyrites. It is manufactured for the arts from old copper sheeting, copper turnings, and copper refinery scales. A little sulphate of copper or blue vitriol mixed with the rice or flour paste used for joining papers, very effectually keeps these destructive pests at a distance. It is made at Amritsar by boiling sheet copper in oil of vitriol. Sells at 8d. per lb.—*Royle; Beng. Phar.*

COPPER-WARE and tutanague utensils, with coral and glass beads, form small portions of the Chinese trade to India; the Chinese seldom use glass beads as ornaments.

COPRA. HIND.

Nari kela, . . .	SANSK.	Kobari ten-kaia, . . .	TEL.
Kobara tengal, . . .	TAM.		

This is the dried albumen or kernel of the cocoanut. In preparing it, the kernel is taken out when fully ripe, divided in the middle, and dried. It is used as an ingredient in curries and in medicine, and is largely exported from India. The kernel of the cocoanut has much the taste of a filbert, and is a valuable ingredient in curries. It is considered as very nutritious. The correct Hindi word is K'hopra.—*Ainslie; Faulkner; Seeman.*

COPRIDÆ. *Leach.* A family of coprophagous beetles, or dung beetles, containing the genera,—*Ateuchus*, *Weber.* | *Sisyphus*, *Latr.*
Gymnopleurus, *Illig.* | *Orepanocerus*, *Kirby.*

COPTIS TEETA.

Taprobanic, *West.*

Copris, *Geoffr.*

Pirmal, *Fabr.*

Onthophagus, *Latr.*

Bonassus, *Fabr.*

Onitis, *Fabr.*

Philemon, *Fabr.*

Copridæ and Dynastidæ correspond to the dung beetles. Some of them are of great size, with immense horn-like protuberances on the head and thorax of the males, and, combined with their polished or rugose metallic colours, render them perhaps the most conspicuous of all the beetle tribe. See Insects.

COPSYCHUS, a genus of birds of the order Insessores, *Fam.* Merulidæ, and sub-family Saxicolinæ. *C. saularis* is the dial bird, common in Ceylon.

COPT, a race in Egypt, about 150,000 souls, following Christianity. Though now more or less mixed with other races, they are the undoubted descendants of the ancient Egyptians. The Coptic language became almost extinct as a living tongue in A.D. 1700. They now for the most part speak Arabic. It was found, when the hieroglyphic letters were written in English letters, that the words formed were in the main Coptic, with a slight admixture from the Hebrew and other tongues; and that the language of the ancient Pharaohs did not differ so much from the language of their modern descendants, as modern English does from that of Alfred the Great. With this key, learned men who knew Coptic have been able to read the hieroglyphics. They have now an alphabet, grammar, and dictionary, and any person may learn to read the mysterious language on the monuments of Egypt as easily as Greek or Latin. The language, though in the main Semitic, has a considerable mixture of Aryan, or Indo-Germanic roots. The Turks call them, in derision, the posterity of Pharaoh; but their uncouth figure, their stupidity, ignorance, and wretchedness, do little credit to the sovereigns of ancient Egypt. Of the diminution of the numbers of the Copts, some idea may be formed from the reduction of the number of their bishops. They were seventy in number at the period of the Arabian conquest. They are now only twelve, and most of these are settled in Upper Egypt.—*Bunsen's Egypt. Cal. Rev.*, No. 73. Sept. 1861, p. 118; *Niebuhr's Travels*, p. 104; *Sharpe's Egypt*, i. p. 133.

COPTIS TEETA. *Wallich.*

Mishmee teeta, . . . ASSAM. | Hong-lane, . . . CHIN.

The golden thread root plant of Assam, is a native of the mountainous regions bordering on Upper Assam, and its root is in high repute among the Mishmee, Lamas, and Assamese. Quantities are sent down to Assam in neat little baskets with open meshes, made of narrow strips of rattan, and measuring 3 to 4 inches in length by 2½ in breadth and 1½ in width; each basket contains about an ounce of small pieces of the root, from 1 to 3 inches long. The taste is intensely and purely bitter, very lasting, with only a slight aroma. On mastication, the root tinges the saliva yellow. In North America, the *Coptis trifolia* is much employed as a bitter tonic. *Coptis teeta* root brings a very high price, and is deemed a tonic remedy of the greatest value. Its influence in restoring appetite, and increasing the digestive powers, are very remarkable. It did not seem to exercise any febrifuge virtue, but under its influence several patients recovered from acute diseases, manifestly and very rapidly improved in strength. The dose

was 5 to 10 grs. of the powder, or an ounce of the infusion thrice only. Latterly, medical officers have used it as a substitute for quinine, both in remittent fever and in common agues. The tincture is a bitter tonic, and its flavour and colour are much more agreeable than the tincture of colomba.—*Beng. Phar.*; *Beng. Disp.*; *Voigt*.

COQUILLA NUTS are produced in the Brazils by *Attalea funifera*, *Martius*, the *Cocos lapidea* of Gœrtner, and the latter title is highly descriptive. The plant might advantageously be introduced into S. Asia. The coquilla nut shell is nearly solid, with two separate cavities, each containing a hard, flattened, greasy kernel, generally of a disagreeable flavour; the cells occasionally enclose a grub or chrysalis, which consumes the fruit. The passages leading into the chambers are lined with filaments or bristles, and this end of the shell terminates exteriorly in a covering of these bristles, which conceal the passages; this end is consequently almost useless, but the opposite is entirely solid, and terminates in the pointed attachment of the stalk. Sometimes the shell contains three kernels, less frequently but one only, and a coquilla nut has been seen entirely solid. The substance of the shell is brittle, hard, close, and of a hazel brown, sometimes marked and dotted, but generally uniform. Under the action of sharp turning tools it is very agreeable to turn, more so than the coconut shell; it may be eccentric turned, cut into excellent screws, and it admits of an admirable polish and of being lacquered. They are extensively used for the handles of bell-pulls, small tops, the knobs of walking-sticks, umbrellas, and other articles. In addition to the nuts, a coarse black fibre is obtained from the dilated base of the petioles. It is partly used for consumption, partly exported to Europe, tied up in bundles of several feet in length, and sold in London under this name at about £14 the ton. It is manufactured into cordage in its native countries, and as it is light, cables made of it do not sink in the water. In 1850, about 250,000 nuts were imported into England, and sold at 30s. to 40s. the 1000.—*Seeman*; *Holtzapfel*; *Poole's Stat. of Com.* p. 98.

CORA, also *Kora*. **HIND.** New, raw, fresh. Hence the Hindi Ghilek, and the Greek Koree, a virgin.—*Pop. Poetry of Persia*, p. 542; *Elliot*. See *Corah*.

CORACIADÆ, a family of birds of the order *Insectores*, consisting of 2 gen., 7 sp., viz. *Coracias pileata*, *garrula*, *Indica*, *affinis*; *Eurystomus gularis*, *orientalis*, and *pacificus*. *C. Bengalensis* is the Indian roller. This and the king crow habitually perch on the telegraph wires to watch for their insect prey, the former displaying his gaily-painted wings to advantage as he whisks and flutters about. *C. Bengalensis* meets in the Panjab, etc., the European *C. garrula*; in Assam, Sylhet, Tipperah, and more rarely in Lower Bengal, it co-exists with the *C. affinis*. *C. garrula*, the roller of Europe, Africa, W. Asia, Afghanistan, Kashmir, Sind, and the Panjab, is migratory. Celebes has the *Coracias Temminckii*.—*Wallace*, p. 284. See *Birds*.

CORACLE. For crossing the rivers in the S. of Asia, on the Tigris, Euphrates, the Upper Indus, and its affluents, the practice of three thousand years still continues. Xenophon's ten thousand were ferried over on inflated skins; and three

slabs in the British Museum show the representation of the king of Assyria crossing the Euphrates in this mode. Canoes are of common use on ferries; and two pieces of the bole of a palmyra tree, scooped out and blocked with clay at the end, and fastened together, are used in the Circars. The coracles of Tibet and all India are circular wicker baskets, six or eight feet in diameter, covered with green hides; when laden, they float lightly on the water, and, presenting but little obstruction to the current, are easily paddled. The wicker and leather coracle traverses most of the rivers in the Peninsula of India. The ferrymen on the Kistna river in the Peninsula are the Koli race, stalwart men. The Kili-katr or Maddakpore race are also Kabl-gira or ferrymen. See *Boat*.

CORA-CORA. See *Java*.

CORAH, also written *Corā*, the mercantile name of plain silk cloth undyed. *Bandanna* is the same article dyed. This word is derived from *Bandhna*, to tie, because in dyeing the materials, the portions to be left white are tied into knots. See *Corā*; also *Cotton Piece-Goods*.

CORAL.

Bussud,	ARAB.	Corale,	IT.
Ky-a-ve-khet, . . .	BURM.	Corallium,	LAT.
Gulli,	DUKH.	Posalam; Karang, MALAY.	
Korallen,	DUT.	Korallii,	RUS.
Corail,	FR.	Birbat; Vidruma, SANSK.	
Korallen,	GER.	Prabala,	"
Ramuth,	HEB.	Bubalo,	SINGH.
Marjan, H., MALAY. PERS.		Pavalam,	TAM.
Munga,	HIND.	Pagadam,	TEL.

Coral, as seen in the market, is the calcareous cell of a mollusc, whose flesh has been removed. It is merely carbonate of lime secreted by species of polypi, its particles cemented together by a gelatinous secretion from these animals. Marsili, an Italian naturalist, thought coral to be a marine plant, and the polype animal its flower, and Dr. Parsons entertained similar views; hence the name zoophytes, or plant animals. The polypi which make the coral so much used for ornament and jewellery, are chiefly *Antipathes glaberrima*, *Madrepora corymbosa*, *M. pocillifera*, *Gorgonia tuberculata*, two species of *Astræa*, *Leiopathes glaberrima*, and *L. Lamarckii*. When still alive in the sea, the rough surface is seen dotted with red spots, and a minute examination detects thousands of the polypi or coral insects, each inhabiting permanently a little cell of its own. Many of the polypi or coral insects have a little parasol-shaped cover for the head; the arms are furnished with eight claws, are long compared with the body, and are generally seen extended as if searching for food. Some of the kinds of coral resemble gigantic plants, with flowers and leaves. Some grow like a tree with leafless branches, and others spread out, fan-like, into broad, flat surfaces.

Coral is in great abundance in the Red Sea, in the Persian and Arabian Gulfs, in various parts of the Mediterranean, at the Mauritius, on the coast of Sumatra, in Japan, etc. It is carried to China from all the islands of the Indian Archipelago in native vessels, and is there wrought into ornaments and official knobs or buttons. It sells from 40 to 60 dollars per pikul, according to the colour, density, and size of the fragments.

The red or precious coral, *Corallium rubrum*, is gathered from the rocky bottoms of the borders of the Mediterranean or its islands, and most

abundantly at 15 to 20 feet, though occurring at 1000 feet. There are independent coral fisheries on the coast of Southern Italy, off Ponza Island; off the Gulf of Gaeta; off Sicily, especially at Trapani, its western extremity; off Corsica and Sardinia, and the islands off Bonifacio; off Algeria, south of Sardinia, near Bona, Oran; off the Marseilles coast, and other places, which in 1853 afforded 80,000 pounds of coral. It is imported to some extent into India, where the most esteemed is the red coral. The pale, delicate pink colour is the most valued in England.

The coral polypi of the E. Indies, Red Sea, Zanzibar, and Central Pacific comprise genera of the Astræacea, Fungacea, Oculinacea, Madreporacea, Alcyonoids, Milleporæ, and Nulliporæ. In the Fiji Islands, Astræas and Mæaudrinæ or brain corals, are abundant. Madreporæ add flowering shrubby of many kinds, besides large vases and spreading folia, some of these folia being over six feet in expanse. Musææ and related species produce clumps of large flowers; Merulinæ, Echinoporæ, Gemmiporæ, and Momiporæ form groups of gracefully infolded or spreading leaves; Pavæ, Pocilliporæ, Seriatoporæ, and Porites, branching tufts of a great variety of forms; Tubiporæ and Xerna, beds or masses of the most delicately-tinted pinks; Spongioidiæ, large pendent clusters of orange and crimson; and Fungiæ display their broad discs in the spaces among other kinds. It will suffice here to name the more beautiful of the coral polyps:—

Alveopora verrilliana, Dana, Fiji.
Astræa pallida, Dana, Fiji.
Alcyonium, sp.
Anthelia lineata, Stimpson, Hong-Kong.
Cancerisocia expansa, Stimpson, China Seas.
Dendrophylla nigrescens, Dana, Fiji.
Fungi lacera, V., Fiji.
Goniophora columna, Dana, Pacific.
Madrepora cribripora, Dana, Fiji.
Madrepora Formosa, Dana, Fiji.
Porites morda, Dana, Fiji.
Telesto ramulosa, V., Hong-Kong.
Xema elongata, Dana, Fiji.

Coral reef corals comprise species of the Astræa tribe, and all but two of the Fungia tribe.

Of the Oculina tribe, all of the Orbicellids and Pocilloporidæ, parts of the Oculinids, Stylasterides, Caryophyllids, Astrangids, and Styloporids.

In the Madrepora tribe, all of the Madreporids and Poritids, many of the Dendrophylla family, or Eupsammids.

Among Alcyonoids, numerous species of the Alcyonium and Gorgonia, and some of the Pennatulacea.

Among Hydroids, the Millepores and Heliopores.

Among Algae, many Nullipores and Corallines.

The corals of colder waters are mostly solitary polyps, either outside the coral reef seas, or at considerable depths within them, and comprise a few Fungids, some Oculinids, many Eupsammids, some of the Gorgonia and Pennatula tribes, and a few of the Alcyonium tribe; a few Milleporids of the genus *Pleobothros*.

Coral Reefs are classed by most authors into lagoon islands or atolls, barrier or encircling reefs, and fringing or shore reefs.

The Atoll or Lagoon Reefs are vast rings of coral rock, often many leagues in diameter, here and there surmounted by a low verdant island,

with dazzling white shores, bathed on the outside by the foaming breakers of the ocean, and on the inside surrounding a calm expanse of water, which, from reflection, is generally of a bright but pale green colour. These are raised by soft and almost gelatinous coral polypifers, which work on increasing the outer edge of the reef, which day and night is lashed by the breakers of an ocean never at rest.

Barrier Reefs are little less marvellous than atolls. In rare places, the whole of the part of the reef that is visible is converted into land; but more usually the barrier reef is shown by a snow-white line of breakers, with here and there an islet crowned by cocoanut trees, and separating the smooth waters of the lagoon-like channel from the waves of the open sea. There are many such outside the small islands in the Pacific Ocean, but the Barrier Reefs of Australia and New Caledonia have excited much attention from their great size.

Fringing Reefs or Shore Reefs differ from barrier reefs in not lying far off shore, and in not having within them a broad channel of deep water.

Darwin supposes that as the reef-building polypifers can flourish only at limited depths, the foundation on which the coral was primarily attached has subsided, alike in the case of the atoll as in that of the barrier reef.

Sometimes the barrier reef recedes from the shore, and forms wide channels or inland seas, where ships find ample room and depth of water, exposed, however, to the danger of hidden reefs. The reef on the north-east coast of Australia and New Caledonia extends 400 miles, at a distance varying from 30 to 60 miles from the shore, and having many fathoms of depth in the channel. West of the large Fiji Islands, the channel is in some parts 25 miles wide, and twelve to forty fathoms in depth. The sloop-of-war Peacock sailed along the west coast of both Viti Lebu and Vauna Lebu, within the inner reefs, a distance exceeding 200 miles. A barrier reef, enclosing a lagoon, is the general formation of the coral islands, though there are some of small size in which the lagoon is wanting. These are found in all stages of development; in some the reef is narrow and broken, forming a succession of narrow islets with openings into the lagoon; in others there only remains a depression of surface in the centre to indicate where the lagoon originally was. The most beautiful are those where the lagoon is completely enclosed, and rests within a quiet lake. Maraki, one of the Kingsmill group, is one of the prettiest coral islands of the Pacific. The line of vegetation is unbroken, and, seen from the mast-head, it lies like a garland thrown upon the waters. It is in the South Pacific Ocean that coral reefs and coral islands are seen in the greatest perfection. The largest known coral reef is the Great Barrier Reef, that runs for 1000 miles parallel to the coast of Australia, and at a distance from the shore of from 20 to 60 miles. The barrier reef of New Caledonia is 40 miles long.—Dana, *Coral Reefs and Coral Islands*; Darwin, *Naturalist's Voyage*; Darwin, *Structure of Coral Reefs*; Gosse, *Natural History*; Macgillivray's *Voyage*; Figuier, *Ocean World*; Maury, *Physical Geog.*; Hartwig; Jansen; Collingwood.

CORALLINACEÆ, a family of marine plants, belonging to the order Algae. According to

Harvey's definition, it includes the Corallinæ and Spongitæ of Kutzing, and the Corallinidæ and Nulliporidæ of Dr. Johnston. They secrete a dense skeleton of carbonate of lime.—*Eng. Cyc.*

CORAL PLANT, *Jatropha multifida*.

CORAL TREE, *Erythrina Indica*, one of a genus of tropical trees, with clusters of very large long flowers, which are usually of the brightest red, whence their name of coral trees. Moore, when describing the Indian islands, notices the

'Gay, sparkling loories, such as gleam between
The crimson flowers of the coral tree,
In the warm isles of India's sunny sea.'

Frequently their stems are defended by stiff prickles. Voigt (p. 237) notices *E. aborescens* of Nepal, *E. ovalifolia* of Bengal, *E. Indica* of India generally, *E. stricta* and *E. suberosa* of the western coast of India, *E. sublobata* of the Peninsula, and *E. crista-galli* has the same popular name.

CORALU. TEL. Millet.

CORAN or **AL-Kuran**, the sacred book of the Mahomedans. It was written in Arabic, but has been translated into Turkish, Persian, Tamil, Burmese, Chinese, and Malay, and into most of the European tongues. See *Koran*.

CORAWA, a homeless race in the Peninsula of India, engaged in mat-making and basket-making. There are several sections, the Tiling Corawa and Koochi Corawa, etc. An ancient Dutch writer on Cochin speaks of its lower ranks, consisting of the Canuianol, who are astrologers; the Corwaa, or exorcisers of evil spirits; the Cuca Corwaa, snake charmers and diviners; and the Poenen Poeloon, who accompany them with tambourines or small drums. These four castes are in some measure distinct, but resemble each in their strict separation from other castes, in their unsettled mode of life, wandering from place to place, and earning their livelihood by exorcism, jugglery, snake-charming, etc., like the heathens in Europe, and in their independence, for they manage their own lawsuits, punish their own criminals, and are subject to no prince or raja. Another caste, he said, are the Mocquaa, who inhabit the sea-shores, and subsist by fishing, many of whom have become Romish Christians. See *India*; *Korawa*.

CORBAN. ARAB., HIND., PERS. The sacrifice; called in the Gospels, a gift. See *Kurban*; *Sacrifice*.

CORBYN, FREDERICK, a medical officer of the Bengal army, editor of the *Indian Review*; *Indian Journal of Medical Science*, Calcutta, 1838-1844; Author of the *Science of National Defence* with reference to India, Calcutta, 1844; *Treatment of Cholera*.

CORCHORUS, a genus of plants belonging to the Tiliaceæ or Linden tribe; the species in India are *acutangulus*, *capsularis*, *fascicularis*, *humilis*, *olitorius*, *prostratus*, and *trilocularis*.

CORCHORUS ACUTANGULUS. Lam.

C. fuscus, Roxb. | *Tita-pat*, . . . BENG.

This annual of tropical Africa grows in Bengal and both Peninsulas. Its flowers are small, yellow, springing up about Rangoon in the rainy season, and mostly found growing along with urena, but not to the same extent. It is one of the jute plants, and affords a strong fine grey fibre.—*M'Cl.*; Voigt.

CORCHORUS CAPSULARIS. Linn. Jute.

Glinalita-pat, . . . BENG. | Heart-leaved corchorus,
Ta-ma; Ho-ma, . . . CHIN. | Eng.

Cultivated in India and China as a fibrous plant, like *C. olitorius*. Jute is sown in good land, well ploughed and drained. It needs damp soil, but requires no irrigation. It is ripe in three, four, or five months, when the flowers turn into fruit capsules. Jute, like hemp, sown around cotton fields protects them from insects and caterpillars; 2000 lbr to 7000 lbs. may be obtained from an acre. 100,000 tons were woven in Dundee in 1876, and 50 million gunny bags were exported from Britain in one year.—*Roxb. ii. p. 581*; V. Mueller.

CORCHORUS FASCICULARIS. Roxb.

Jangli-pat, . . . BENG. | Bil nalita, . . . BENG.
Grows in Hindustan, Bengal, and the Peninsula.—*Roxb. ii. p. 582*.

CORCHORUS OLITORIUS. Linn. Jute.

C. decem-angularis, Roxb.

Gania, . . . AMBOIN. | Kowria of . . . OUTTAOK.
Pat; Ban-pat, . . . BENG. | Jew's mallow, . . . ENG.
Bhungli-pat; kooшта, . . . Ruml tajua, . . . MALAY.
Phet-wun, . . . BURM. | Putta, . . . SANSK.
Oimoe, . . . CHIN. | Parinta; Perintakura, TEL.

An annual plant. In Bengal there are two varieties,—the green (Pat, BENG.), the reddish (Bun-pat, BENG.); both are used for their fibres, which are called jute and pat, the jute of commerce. A coarse kind of cloth (tat) is woven from the jute, and affords the material for the well-known gunny bags. An infusion of the leaf is much employed as a fever drink among the natives of the Lower Provinces. It grows wild about Rangoon during the rainy season, though not to the extent that urena does. The leaves of this plant are used in Egypt as a pot herb, and under the name of Nurcha or Sag greens; they are in common use amongst the natives of India. Both *C. capsularis* and *C. olitorius* afford the jute of commerce, which, both in the raw and manufactured form, is exported from India. The plant is to be found everywhere under cultivation. Every farmer requires rope and twine, and so grows a little jute. The fibre is extracted similarly to that of the 'sunn' hemp. Mr. Le Franc of New Orleans constructed a machine for cleaning jute and other fibre plants. With it four men in a day produced a ton of fibre, and it leaves no butts or refuse.—*Roxb. ii. 582*; Voigt; Jaffrey; Royle; M'Clelland; O'Sh. p. 229; *Cuttack Local Committee*. See Jute.

CORCHORUS PYRIFORMIS. Smith. Tang-ti, CHIN. A plant of China and Japan; fruit pear-shaped.

CORCHORUS TRILOCULARIS. Linn.

The plant—Ba-phall, . H. | The seeds—Isband, HIND.

Grows wild in the Panjab; seeds are given in rheumatism; it is *C. acutangulus*, Lam.—*Stewart*.

CORDAGE.

Touw-werk, . . . DUT. | Oalame, . . . IT.
Manœuvres, . . . FR. | Tali; Kalat; Utaa, MALAY.
Tauwerk, . . . GER. | Cordaje; Jarcia, . . . SP.
Dudah, . . . GUY. | Nar, . . . TAM.
Rassi, . . . HIND. | Daramu, . . . TEL.

Cordage is the commercial term for cord or rope of every kind. Cordage of excellent quality is manufactured in India, and plants of Southern and Eastern Asia yielding fibre are as under:—

Abelmoschus esculentus, Vondæ fibre.

A. ficulneus.

Abutilon Indicum, Toottee.

A. polyandrum.

A. tomentosum.

CORDAGE.

Acacia Arabica.
A. leucophloea.
Eschynomene cannabina.
Agave Americana, Pita fibre or great aloe.
A. vivipara, Kathalay.
Allantus Malabaricus, Poroo maram.—Inner bark.
Aloe Indica or *A. vulgaris*, Kuttally nar.
A. perfoliata, aloe fibre.
Ananassa sativa, pine-apple fibre.
Andropogon schoenanthus, Camachy pillo.
A. involutum.
Antiaris saccidora, Arenges.
Arundo donax.
Bauhinia racemosa.
B. diphylla.
B. Vahlil, Vepy tree bark.
B. tomentosa, Vellay atee nar.
Bignonia coronaria.
Boehmeria; several species.
Borassus flabelliformis, Palmyra fibre.
Butea frondosa.
Callicarpa lanata, Thondy nar.—Inner bark.
Calotropis gigantea, Ak, Mudar, Yercum.
C. procera.
Cannabis sativa, hemp.
Carex Indica.
Chamæcrops Ritchiana, homp palm.
Cordia obliqua, Pothooverooasen nar.
Crotalaria Burhia.
C. juncea, Sunn, Wuokoo nar, Canambo.
C. tenuifolia.
Cocos nucifera, coir.
Corchorus olitorius, jute.
C. capsularis, jute.
Cyperus textilis, mat grass, or Coaray.
Decaschiastia crotonifolia.
Desmodium argenteum.
D. tiliaefolium.
Damia extensa, Ootrum.
Eriochloa Candollii.
Eriodendron anfractuosum, bast.
Eriophorum comosum.
Erythrina Indica.
Ficus religiosa, Arasa nar.
F. racemosa, Atti nar.
F. Indica, Aulauram nar, Aallen nar.
F. oppositifolia, Boddu nar.
F. Mysorensis, Kul-aallun nar.—Not much used.
F. Roxburghii; *F. venosa.*
Fourcroya gigantea, Secmay Kathalay.
Girardinia Lechenaultiana, Neilgherry nettle.
Gossypium Indicum, Indian cotton.
G. acuminatum, Brazil cotton.
G. Barbadosense, Peruvianum, religiosum.
Grewia Asiatica, bast.
G. oppositifolia.
G. tiliaefolia.
G. rotundifolia, Oonoo.—Moderate strength.
Guazuma tomentosa.
Hibiscus cannabinus, Polychay fibre.
H. macrophyllus.
H. subdariffa, Roselle fibre.
H. vesicarius, wild ambara.
H. rosa Chinensis, shoe plant fibre.
H. vitifolia; *H. lampas*; *H. macrophylla.*
Isora corylifolia, Valumbrikai, Kywen nar.—The most valuable fibre in Travancore. The plant grows abundantly at the base of the hills. Fibre is from the stem.
Linum usitatissimum, flax.
Marsdenia Roylii.
Mimosa intsia, Eenjy nar.
Mississaya.
Musa paradisiaca, plantain fibre.
M. textilis, Manilla hemp.
Orthanthera viminea.
Pandanus odoratissimus, fragrant scrow-pine.
Paritium macrophyllum.
P. tilineum.
Philadelphus, sp.
Phoenix acaulis.
P. dactylifera.
P. sylvestris.
Rhapis.
Saccharum spontaneum.

CORDIA LATIFOLIA.

S. sara, Sara.
Sansevieria Zeylanica, Morghee or Marool.
Salmalia Malabarica, Elavum parooty.
Sebania cannabina.
Sida populifolia.—Used for cordage, etc.
Strychnos potatorum, Kathaven nar.
Smilax ovalifolia, Krinkoddy nar.—Used for tying bundles, etc.
Sterculia guttata; *S. ornata*; *S. ramosa*; *S. villosa.*
Terminalia alata, Mooroothen nar. — Bark very strong, and lasts many years; used for dragging timber, cordage, etc. Common in the forests.
T. belerica, Umburothee nar.
Tylophora asthmatica, Koorinja.
Typha angustifolia.
Ulmis campestris.
Urtica heterophylla.
Vernonia anthelmintica, Caat seeragum.
Wikstræmia salicifolia.
Yucca gloriosa, Pita or Adam's needle.
Y. aloefolia.

The exports of cordage, excluding jute, from British India, were as under:—

1875-76, . . .	30,216 cwt.	Rs. 3,33,673
1876-77, . . .	24,198 "	2,65,603
1877-78, . . .	46,087 "	3,65,790
1878-79, . . .	32,812 "	3,55,377

It still requires to be determined whether tanning or tarring is the better mode of preserving cordage in India, and whether a substitute for tar might not be discovered in some of the numerous resins and gum-elastics of Southern India.

CORDIACEÆ, an order of plants comprising the genera *Cordia*, *Cordiopsis*, and *Erycibe*. The chief species of *Cordia* known are,—*angustifolia*, *cuneata*, *domestica*, *fulvosa*, *gerascanthus*, *grandis*, *latifolia*, *Leschenaultii*, *monolea*, *myxa*, *obliqua*, *orientalis*, *Perrottetii*, *polygama*, *prionodes*, *Rothii*, *sebestana*, *serrata*, *tectonæfolia*, *tomentosa*, *trichostemon*, *Wallichii*. *C. fragrantissima*, Kurz, is of Burma; *C. Nepalensis*, (Wall., also occurs in Simla; *C. obliqua*, Thw., is a tree of Ceylon; *C. tomentosa* is confined to the southern parts. In the Dehra and Khera jungles is *C. latona*, Ham., Buch., perhaps only a variety of *C. myxa*, and a new species, *C. incana*. The bark of some of the *Cordia*, when young, may be found to yield a useful fibre.—Voigt, p. 441; W. Ic.; M. E. J. Rep.; Royle, Ill. Him. Bot.

CORDIA ANGUSTIFOLIA. Roxb.

<i>C. reticulata</i> , Roxb.	Narrow-leaved sepistan.
Gund; Goondi, . . HIND.	Naruvalli, . . . TAM.
Gundhi; Goondhi, . . .	Chinna botuku, . . TEL.
Liya, SIND.	Nukkeru,

This tree grows from 30 to 40 feet high in Hurdwar, Gujerat, and the Dekhan; the wood is very tough, is used for carriage poles, posts, and in house-building, and is recommended for gunstocks. It is common about villages in the Circars, but never seen in the jungles. Fruit the size of a large pea, round and smooth, the pulp yellow and gelatinous, edible, but tasteless.—Roxb.; Royle; Riddell; Beddome; Voigt; Bird.

CORDIA LATIFOLIA. Roxb. Sepistan.

Buluari, BENG.	Pistan-sug, PERR.
Buro buhoari,	Gedooroo, SIND.
Burgoond; Vurgoond, GUJ.	Sheloo, SANSK.
Bhokur; Barra lesura, H.	Kicha virigi chettu, . . TEL.

The tree occurs in Gujerat, Hindustan, but is mostly confined to the southern parts of India. It has numerous spreading branches, and the young shoots are angular and smooth. Phaleeta or slow matches are made of the bark. The tree

is hardy and ornamental. The wood is very inferior, and of small size. The fruit is eaten. Under the name of sebesten plums, or sepistans, two Indian fruits have been employed as pectoral medicines, for which their mucilaginous qualities, combined with some astringency, have recommended them. They are believed to have been the Persea of Dioscorides, and this tree furnishes one of them. Linnaeus applied the name of Sebastan to an American species of this genus, which is not known in medicine.—*Eng. Cyc.*; *Roxb. i. p. 588*; *Voigt*; *Irvine*; *O'Sh.*; *Wight*; *Royle*; *Elliot, Fl. Andh.*

CORDIA MACLEODII. *Hooker.*

C. monoica? | Hemigynma Macleodii.

Dhengan, . . . HIND.? | Dhyang, Deyngan, . HIND.

A tree of Jubbulpur, from which there was sent to the Exhibition of 1862 specimens of a remarkably beautiful wood, found in Mundla and Seonee, and also Central India. Its wood approaches teak in its properties.—*Cal. Catalogue*, 1862.

CORDIA MYXA. *Linn.* Lebuk of Avicenna.

Mochayet of Forskal.	Cordia domestica, <i>Roth.</i>
Prunus sebestana, <i>Pluk.</i>	Sebestana domestica, <i>Lam.</i>
Cornus sanguinea, <i>Forsk.</i>	S. myxa, <i>Commel.</i>
Cordia officinalis, <i>Lam.</i>	S. officinalis, <i>Gærtn.</i>

The Fruit.

Behuari, BENG.	Buhoorearuka, . . . SANSK.
Tha nat, BURM.	Lolu, SINGH.
Bukhoor, DEC.	Vidi maram, . . . TAM.
Sepistan plum tree, <i>ENG.</i>	Nakkeru; Iriki, . . TEL.
Lasura, Gondni, . . HIND.	Pedda botuku, . . "
Kendal, JAV.	Mookooroos karra, . . "

A pretty large tree, a native of Egypt, Persia, Arabia, Ceylon, the forests of the Godavery, Hindustan, and Nepal. It grows wild in the Siwalik up to 4000 feet, and it is common throughout the Konkan, Pegu, and the Malay Peninsula. The trunk is from 8 to 12 or 15 feet high, generally crooked, but as thick as, or thicker than, a man's body, with numerous spreading branches bent in every possible direction, and forming a dense shady head. The wood is soft, and of little use except for fuel. In Sind, fuse is prepared from the grey cracked bark. It is reckoned one of the best kinds of wood for kindling fire by friction, and is thought to have furnished the wood from which the Egyptians constructed their mummy cases. The wood and bark are said by Dr. Royle to be accounted a mild tonic. Its dried fruit is the smaller sebestens or lobestens of European medicine; it is a yellow berry, with a strong, sweetish taste, and serves as a preserve; the mucilage of the fruit is demulcent. The root is said to be purgative. The larger fruit is called lasura, and the smaller variety lasuri; its seeds are the Chafoon ki binj, HIND., used in powder mixed with oil as an application in ringworm.—*Roxb.*; *O'Sh.*; *Stewart*; *Royle*; *Brandis*; *Riddell*; *Bird*; *Powell*; *Eng. Cyc.*; *Fl. And.*; *Voigt*; *Thur.*

CORDIA OBLIQUA. *Willd.*

C. tomentosa, <i>Wall.</i>	C. domestica? <i>Roth.</i>
C. Wallichii, <i>G. Don.</i>	

Gondni; Lasura, . HIND. | Selu; Naruvalli, . TAM.

This is a large, handsome tree, common in the lower provinces of India, with a small, round, reddish-coloured, pleasant-tasted, but glutinous fruit; furnishes a fibre, Pothooveroosen nar, of moderate strength.—*Ainslie*, p. 228.

CORDIA POLYGAMA. *Roxb. i. p. 494.*

Bottu kuru chettu, . TEL. | Pach-cha botuku, . TEL.
A strong, close-grained wood, small and crooked, found in the Circars.

CORDIA ROTHII. *Rœm. et Sch. C. cuneata, Heyne.*

Bokur, MAHR. | Narvilli maram, . . TAM.

Dr. Wight believes the wood is very inferior, the trees being usually small; and Dr. Gibson says that *C. Rothii*, *C. fulvosa*, and *C. obliqua* do not yield timber fit for anything but firewood. They are not uncommon in the Bombay forests, but are more generally met with near cultivated lands and villages.—*Roxb. i. 591*; *Wight*; *Gibson*.

CORDIA VESTITA. *H. f. et Th.*C. incana, *Royle.* | Gynaion vestitum, *D. C.*

Kumbi of BRAS. | Karuk of SUTLEJ.

A small tree of Garhwal, rare in the Siwalik tract, nearly as far as the Jhelum, and in the Salt Range to 3000 feet. Common in N.W. Provinces. The wood is valued for wheel-work. The fruit is eaten, and said to be sweet.—*Stewart*; *V. Mueller*.

CORDIA WALLICHII, *G. Don.*, *C. tomentosa*, *Wall.*, is a good-sized tree, tolerably common throughout the Madras western forests, also in Mysore and the Bombay Presidency. Technically it is hardly distinct from the common Cordia myxa, but the densely woolly leaves will distinguish it. The timber is serviceable, and in use with the natives.—*Beddome, Fl. Sylv.* p. 245.

CORDYCEPS SINENSIS. *Smith.* Hia-ts'au-tung-Ch'ung. This fungus, the Spæria of some writers, grows upon the head of a caterpillar, as a disease of the insect; supposed to be a species of *Hepialus*. It is said to be common in Southern Tibet; it occurs in Sze-chuen, Hu-kwang, Hu-peh, and Hu-nan. It is reported to be as good as ginseng, and to be worth four times its weight of silver.—*Smith*.

CORDYLES, the Zonuridæ family of the lizards or sauria. See Reptiles.

CORDYLIA PALMARUM, the grub of the palm weevil; is eaten roasted in the West Indies. It is the size of the thumb.

CORDYLINE BANKSII. *J. D. Hooker.* The long-leaved palm lily of New Zealand. Its leaves furnish a superior fibre for ropes. *C. Baueri*, *J. D. Hooker*, of Norfolk Island, rises 40 feet high; and *C. indivisa*, *Kunth*, of New Zealand, also furnishes the toi fibres.

COREA or Korea, the Kaoli of the Chinese, called Chaou Seen by the natives. Corea is a kingdom in a large peninsula, stretching from lat. 42° 19' N., southwards to the Straits of Corea, area 91,000 square miles.

The peninsula of Corea bears a strong resemblance in its physical aspects to Italy. An axial range of mountains runs close to and parallel with the east coast; the rivers which flow westward from it, and fall into the China Sea, being of considerable length, and those that flow eastward into the Sea of Japan, small and unimportant. Regarding the west coast but little is known. It is for the most part a flat and uninteresting coast, inhabited by a class of people reported to be rude and inhospitable, and dangerous to navigation on account of rapids and high tides. The east coast, on the contrary, is a magnificently wooded series of mountain spurs, running down from the axial range of the country close to the water's edge, and

COREA.

visible many miles at sea. It is conterminous with the coast of Russian Tartary, and has been accurately surveyed again and again by Russian men-of-war. The whole coast is one grand succession of hills and mountains, forest-clad at their summits, and covered on their lower slopes with a jungle of dwarf oaks, creepers, stunted pines, and a dense undergrowth of shrubs and grasses of every variety. Tigers abound, and pits to catch them may be seen close to the villages with which every valley is studded.

Corcia is an independent state, perfectly sovereign within her own borders, with a peaceful and industrious population, who desire nothing better than that they be left alone to earn their own bread in their own way. The hills which cover the east of the country are given over to wild beasts, it is true; but wherever cultivation by simple methods is possible, there it swarms with millions of people, and there is no reason to believe that they are not perfectly satisfied with themselves, their rulers, and their country.

The Coreans are in physique the finest people in Eastern Asia, and in bearing much more manly than it is the fashion to represent them, but they are as a nation absolutely unarmed. They have lived in such complete seclusion, that they are frightened with strange sounds and sights even, although this is the timidity of ignorance, not of a craven spirit.

Although Corcia is thus described as an independent sovereign state, in the sense that her municipal laws, her executive, the succession to her throne, and the treaty relations she has entered into with Japan, are purely of her own creation, she is in another sense a feudatory of China. The services which she performs, whatever may have been their origin, are now-a-days performed from sentimental, not political motives, and her title to the sovereignty she possesses is not based on their due performance. To speak strictly, they consist of a formal recognition by the emperor of China of each successive king, and the despatch to Peking at stated intervals of a mission bearing tribute. Its border on Russian territory has been surveyed. It is the most easterly part of the Asiatic continent, and is separated from the Chinese empire by the Than-pe-chang or Pe-theu-shan, the white-headed mountains, a formidable range. The native prior race are of Mongoloid origin, but the mercantile population are said to belong to the Indo-European race. The native race averages 5½ feet, have a wheaten-yellow colour, prominent cheek-bones, heavy jaw, flat and crushed root of nose, wide nostrils, rather large mouth, thick lips, oblique eyes, coarse, thick, blackish hair, frequently tinged with red, thick eyebrows, thin beard. They have a tradition that they sprang from a black cow on the shores of the Japan Sea. It has innumerable islands on its W., S., and E. coasts, the largest being Kang-wha on the west, Quelpart on the south, and Ollongto on the east. Quelpart mountains rise to 6600 feet above the sea. The total inhabitants of the peninsula and islands are estimated at 16 millions. Some of the mountains rise to 10,000 feet above the sea. The capital and residence of its kings is Saoul, with 100,000 to 150,000 inhabitants. The higher classes have a tendency to the Turanian physical type, as with the Japanese and those of Siberia.

CORINGA.

They are polygamic, and purchase their wives. Their women are secluded. The dead are buried in wooden coffins, or wrapped in sheets. Rice is the chief article of diet; they eat largely, and drink much alcoholic fluid; are fond of music, honest, good-natured.—*Ernest Offert's Forbidden Land*; Yule, *Cathay*, ii. 268.

CORGE. Twenty pieces of cloth.

CORIANDER SEED.

Kezirah,	ARAB.	Coriandri semina, . .	LAT.
Nan nan,	BURM.	Moti; Katunbar, . .	MALEAL.
Cottimbiry,	CAN.	Kushniz; Kitnuz, . .	PERH.
Shih-lo,	CHIN.	Coentro,	PORT.
Siau-hwei-liang, . .	"	Dhanyaka,	SANSK.
Coriandre,	FR.	Kotambaru,	SINGH.
Koriander saamen, .	GER.	Oilantro,	SP.
Korion,	GR.	Cottamalli,	TAM.
Gad,	HEB.	Dhaniala vittulu, . .	TEL.
Dhannia; Dhunia, .	HIND.	Kotimiri,	TIB.
Coriandro,	IT.		

This is the fruit or seed of the annual plant, *Coriandrum sativum*, cultivated in the East and in Europe, and procurable in all Indian bazars. When fresh, their smell is strong and disagreeable, but by drying it becomes sufficiently grateful. They are used as an ingredient in curries in India, and medicinally as a stimulant and stomachic. In Europe, coriander seed is chiefly used by distillers to produce an aromatic oil. The quantity imported annually into Britain is about fifty tons, and sells at 24s. the cwt.—*M. E. J. R.; Simmonds; M'C.; Birdwood; Waring.*

CORIANDRUM SATIVUM. *Linn.* The coriander plant is found in the cornfields of Tartary, the Levant, Greece, Italy, and south of Europe, and it is grown in every part of Southern Asia, where the leaves are used by the natives for chatnis and curries; the fruits being also carminative and aromatic, are used in decoction, in sweetmeats, in certain stomachic liqueurs, and in some countries in cookery; they are little esteemed in England. During the unripe state, the odour resembles that of bugs, but this changes rapidly as ripening proceeds. See derives Coriandrum from *xopis*, a bug.—*O'Sh.; Roxb.; Voigt; Lindley.*

CORIARIA MYRTIFOLIA, Linn., is used in tanning leather, and also for staining black. It is worth £9 to £10 per ton.

CORIARIA NEPALENSIS. Wall.

Ratsahara,	ARMURA, BEAS.	Balel, Tadrelu, . .	KANGRA.
Phapar-chor,	"	Balel,	KASHMIR.
Shalu, Baulu,	CHENAB.	Kande, Shala, Rau, .	RAVI.
Guch,	HIND.	Archalwa,	SUTLEJ.
Mussorie, Majuri, . .	"	Shere, Lichakro, . .	"

Grows all along the Himalaya, from 5000 to 7000 feet, and, from its abundance, has bestowed its name on Mussoori hill station. The fruit formed by the junction of several pistils is eaten in the hills, although that of the European species is poisonous, inducing narcotism and tetanus.—*O'Sh.; Clegh.; Stewart; Voigt; Royle; Powell, Handbook*, i. p. 336.

CORINGA, a town at the northern mouth of the Godavery river, on a branch generally called the Coringa river. It is a seaport town, where ships are built, and is in a bay from off the Bay of Bengal; population, 5649. The district has been repeatedly inundated. In May 1787, after a long and very violent gale from the northward, the sea rushed over the site of the town, and in a moment destroyed nearly the whole of the people, 4000 in number. A similar catastrophe occurred in 1837, when 15,000 people and 100,000 head of

CORK.

cattle were destroyed; and the ships in the bay and on the stocks were swept far inland. It is 9 miles S.W. of Cocanada, in lat. 16° 48' 25" N., and long. 82° 16' 20" E. It is the only harbour between Trincomalee and Calcutta where ships can be docked.

CORK.

Shuh-tze,	CHIN.	Sampal; Sumbat, MALAY.
Kork, Vlothout, DUT., GER.		Cortica (de Sovreiro), PORT.
Lège,	FR.	Korkowoe; Derowo, RUB.
Bhu,	HIND.	Corcho, SP.
Sughero, Suvero,	IT.	Karka, TAM.
Suber,	LAT.	Birada, TEL.

Cork is the outer bark of *Quercus suber*, an evergreen oak growing in Portugal, Italy, the south of France, Corsica, and in Spain throughout the whole extent of the Tierra Caliente, but most abundant in Catalonia and Valencia, whence the principal exports have been made. This substance is developed on other plants, but on none in so large quantity as in the *Quercus suber*. It is light, porous, compressible, and elastic, and many articles are cut out of it. As soon as the bark dies, it falls off in flakes, which correspond to the layers that are formed annually. These outer layers the Spaniards collect; the inner living bark should be spared. In Corsica and Spain, where the tree is abundant, this bark is removed for tanning, and contains twice as much tannin as oak-bark of average quality. The tannin appears to resemble that of catechu; it affords scarcely any bloom, and gives a dark colour to the leather. At the Madras Exhibition of 1855, two specimens of a cork-like substance were exhibited, one good, from the 'Western Coast Jungles,' and another inferior, from Coimbatore; the trees producing the samples were not mentioned. The deeply cracked spongy bark of the *Bignonia suberosa*, the country cork tree, yields an inferior kind of cork.—*M. E. J. R.; Eng. Cyc.; M'C. Dict. of Com.; Royle, Arts and Manufactures*, p. 484.

CORK TREE of China. *Smith*. Fan-Sha, CHIN. Its bark resembles that of *Quercus suber*.

CORMORANT. *Salach*, HEB. Cormorants are trained in great numbers, in the eastern Chinese provinces, to capture fish, and are sometimes under such good order that they will disperse at a given signal, and return with their prey without the precaution of a neck-ring. A single boatman can easily oversee twelve or fifteen of these birds; and although hundreds may be out upon the water, each one knows its own master. If one seize a fish too heavy for it alone, another comes to his assistance, and the two carry it aboard. The birds themselves are fed on bean-curd, and eels or fish. They lay eggs when three years old, which are often hatched under barn-yard hens, and the chickens fed with eels' blood and haah. They do not fish during the summer months. The price of a pair varies from 5 to 8 dollars. See Fisheries.

CORN.

Korn,	DAN., GER.	Butir, Biji,	MALAY.
Kraanen, Goren,	DUT.	Zboze,	POL.
Bleds,	FR.	Gracos,	PORT.
Getreide,	GER.	Ohljeb,	RUS.
Anaj,	HIND., PERS.	Granos,	SP.
Blade, Grani,	IT.	Sad, Spanmal,	SW.
Frumentum,	LAT.		

The grain or seed of cereal plants used as food; wheat, barley, oats.—*Faulkner; M'Cull*.

CORNUS SINENSIS.

CORNELIAN.

Achaat,	DUT.	Agata,	IT.
Agate,	FR.	Abhates,	LAT.
Achat,	GER.	Agat,	RUS.

A quartzose mineral, found in great abundance in India; classed as one of the inferior gems, and largely cut at Cambay from stones collected from the drift of the Rajpipla range. Shafts are sunk to the stratum containing the minerals. These are burnt to bring out the colours, and are cut into paper-weights, knife handles, miniature-sized cups and saucers, tables for snuff-boxes, sets of brooches, necklaces, and bracelets, pins, buttons, and studs. A field gun, with all its appointments, is one of the finest ornamental pieces of Cambay stone work; they sell for from Rs. 40 to 50. The polish of Cambay stones is not such as pleases the eye of the European lapidary; yet they are so cheap, they might be expected to become a considerable article of commerce, and might be built up into mosaics for work-tables, into chess-boards, and other elegant articles of furniture,—the chief part of the work being performed here, where labour is cheap, the final finish being given in Europe. The Cambay agates equal the finest Scottish pebbles in beauty; they generally exceed them in size, and may be had for a mere fraction of the price.

In 1844 their exports amounted in value to Rs. 93,478, and in 1845 to Rs. 88,849. See Arts; Cambay.

CORNICULARIA JUBATA. *Ach*. The Kek-kieo of the Burmese; an edible cryptogam of Ramree.

CORNUS, a genus of large trees and shrubs of the Cornaceæ or dogwood tribe. *C. oblonga* occurs in the Dehra Doon, *C. macrophylla* and *C. nervosa* in Mussoori, and *C. capitata*, *Wall*. (*Benthamia fragifera*, *Lindl.*), at a still higher elevation. The fruit of *Benthamia* is eaten in the hills, and from the seeds of some species an oil is expressed. Wight figures *C. altera*, *C. sylvestris*, and *C. Zeylanica*. The bark of the *C. florida* and *C. sericea* are said to be most excellent tonics.—*Drs. Riddell, O'Sh., Wight*.

CORNUS MACROPHYLLA. Wall.

Dogwood,	ENG.	Kashr,	PANJ.
Kandar,	HIND.	Kaghi,	
Kandra; Kandru,		Haleo; Harin; Hadu, "	
Kaksh,		Harrin, Nang,	

This is found in the Sulej valley between Rampur and Sungham, and in many parts of the Panjab Himalaya, at an elevation of 7000 feet. Its fruit is edible, and goats feed on the leaves; and the wood hard, but small, is made into charcoal employed in the manufacture of gunpowder.—*Drs. Stewart, Cleghorn, Panjab Report*.

CORNUS OBLONGA. Wallich.

Ban-kukur, JHELMUM. | Bakar, OIS-SUTLEJ. A smallish tree in the outer hills in the east of the Panjab, sparingly in the Siwalik tract; occasionally to 4000 feet up to near the Indus; timber of no special use.—*J. L. Stewart, M.D.*

CORNUS OFFICINALIS. Smith.

Shan-sha-yo, CHIN. | The fruit—Jan-tsau, CHIN.

The Cornelian cherry is a prickly shrub of Japan, Kiang-su, Shen-si, and Shan-tung. The flowers are white. The red drupes contain a good deal of oil; they are dried and sold.—*Smith*.

CORNUS SINENSIS, *Smith*, Cornelian cherry, the Hu-t'ui-tsz of China, resembles *C. mascula*. It

has white flowers; slender, supple branches, with long pointed leaves, downy on the under surface. Its fruits are astringent, and leaves used in coughs.—*Smith*.

CORNWALLIS, CHARLES, MARQUIS, was twice Governor-General and Commander-in-Chief in India. He served successfully in Ireland, but subsequently in America with great disasters. He was sent out by Mr. Pitt to India, and the Act of Parliament of 1784 and 1786 was passed to give him supreme power. He arrived in Calcutta on the 12th September 1786, and re-embarked on the 10th October 1793. During this period the second war with Mysore occurred. He was the first to bring about unity of action between the Indian and Home Government, and the first to recognise the duty of paying Indian servants well, and to abolish all distinctions between the King's and Company's military officers. In 1788 he received power to bestow local commissions on the latter. His care was directed alike to financial and administrative measures, but also to the moral and social condition of the Anglo-Indian community; and in 1793 he issued regulations which for 38 years formed the basis of the administration of justice in India, and were changed only in 1831 during Lord William Bentinck's administration. He gave effect to the long-discussed subject of perpetual settlement under a zamindar class, a system which has since been greatly condemned. In 1793 he went from India to Ireland. He received the title of Marquis, and returned to India on the 30th July 1805, from which date, till his death at Ghazipur on the 5th October 1805, he was a second time Governor-General. A monument was erected to his memory at Ghazipur, and a statue at Madras.

COROMANDEL, with Europeans a geographical designation of the coast-line in the south of the Peninsula of India washed by the Bay of Bengal. It extends from Point Calimere to near the mouth of the Kistna river. Its revenue districts are Tanjore, S. Arcot, Chingleput, N. Arcot, and Nellore. The name is not known to the people, and has been supposed to have its origin from the village of Coromandel, on the Pulicat marine lagoon north of Madras, and to give its name to the entire eastern coast of the Peninsula. It has also been derived from Chola-mandala, which Paolini the Carmelite explained to mean the middle country, but which scholars interpret as the dominion of the Chola race, one of three Hindu dynasties who anciently held the Tamil country in the south. It is not impossible, however, that the general name has been connected with this particular village of Kurr-mandlum, TAM., meaning 'Black Sand.' It is on the sea bank of the Pulicat lake, about 35 miles north of Madras, and formerly held by the Dutch. It is in the Chingleput district, in lat. 13° 26' 10" N., long. 80° 20' 36" E. Population, 3050 in 1871. See Chola-Mandaloor.

COROMANDEL WOOD is the produce of the *Diospyros hirsuta*, a Ceylon tree of great size, having a dingy ground, and sometimes running into white streaks. The figure is between that of rosewood and zebra-wood; the colour of the ground is usually of a red hazel-brown, described also as chocolate brown, with black stripes and marks. It is hard, but veneer saws cut it without particular difficulty; it is a very handsome furniture wood, and turns well. Mr. Layard says

there are three varieties,—the Calamander or Coromandel, which is the darkest, and the most commonly seen in England; the Calamberri, which is lighter-coloured, and striped; and the Omander, the ground of which is as light as English yew, but of a redder cast, with a few slight veins and marks of darker tints. He says the wood is scarce, and limited to Ceylon; that it grows between the clefts of rocks; this renders it difficult to extract the roots, which are the most beautiful part of the trees. Its names are corruptions of two Singhalese words, Kalu mederiye.—*Faulkner; Mendis; Tredgold; Holtzapfel; Ferguson*.

COROSOS, or Ivory Nut, is produced by the *Phytelphas macrocarpa*, growing in Central America and Columbia (Humboldt). The tree is a genus allied to the Pandanæ, or screw-pines, and also to the palms. They are seeds with osseous albumen. The nuts are of irregular shape, from one to two inches diameter, and when enclosed in their thin husks they resemble small potatoes covered with light-brown earth; the coat of the nut itself is of a darker brown, with a few loose filaments folded upon it. The internal substance of the ivory nut resembles white wax rather than ivory. It has, when dried, a faint and somewhat transparent tint between yellow and blue; but when opened, it is often almost grey from the quantity of moisture it contains, and in losing which it contracts considerably. Each nut has a hole which leads into a small central angular cavity; this, joined to the irregularity of the external form, limits the purposes to which they are applied, principally the knobs of walking-sticks, and a few other small works. It might be introduced into India.—*Holtzapfel*.

COROXYLON GRIFFITHII. Soda is made from this plant by burning and levigating; three kinds are recognised,—Choa-sajji, the purest; Hat'ha-sajji, second sort; K'hara-sajji, third sort.

CORPULENCE is a state of body very frequently seen amongst the richer of the Hindus. A tabular statement, taken from a mean average of 2648 healthy Englishmen, was formed and arranged for an insurance company by the late Dr. John Hutchinson. His calculations were made upon the volume of air passing in and out of the lungs, and this was his guide as to how far the various organs of the body were in health, and the lungs in particular. It may be viewed as an average, some in health weighing more by many pounds than others:

5 ft. 1 in., . . . 120 lbs.	5 ft. 7 in., . . . 148 lbs.
5 " 2 " . . . 126 "	5 " 8 " . . . 155 "
5 " 3 " . . . 133 "	5 " 9 " . . . 162 "
5 " 4 " . . . 136 "	5 " 10 " . . . 169 "
5 " 5 " . . . 142 "	5 " 11 " . . . 174 "
5 " 6 " . . . 145 "	6 " 0 " . . . 178 "

CORREA. Shortly after the occupation of Malacca by the Portuguese, Antonio Correa was sent to Pegu, with the object of opening a trade with Burma.

CORREA, GASPARE, author of the *Lendas da India*, 4 vols. 4to, the oldest historian of the Portuguese in India; written 1561 (printed at Lisbon 1858-1864), from Vasco da Gama's voyage in 1497 to the government of Jorge Cabral in 1550.

CORROBORY, a dance amongst Australian

natives, in which the performers, with shields in their hands, circle round a fire.—*Am. Ex.* p. 247.

CORROSIVE SUBLIMATE.

Poh-kiang-tan, . . .	CHIN.	Bichlorure de mercure, Fr.
Poh-kiang, . . .	"	Rasapur, . . . HIND.
Doppelt Ohlorqueek-silber, . . .	DUT.	Hydragri bi-chloridum, . . . LAT.
Biehlorde of mercury, ENG.		Dar-chigna, . . . PANJ.
Sublime corrosif, . . .	FR.	

This is largely made in India, but in an imperfect manner, and used in native medicine. Some very fine specimens were shown at the Panjab Exhibition from Amritsar and Lahore.—*Powell*. See Mercury; Rasapur.

CORSICAN MOSS. See Edible Seaweed; Fucus.

CORTES. Hernan Cortes, a Spanish navigator, who, in A.D. 1528, endeavoured to follow up the discoveries of Magellan. He took possession of the Marianas or Ladrone Islands, but, with all the members of his expedition, fell victims to the climate and the hostility of the Portuguese.

CORTINARIUS EMODENSIS, *Berkley*, and also *C. violaceus*, Fr., are large mushrooms, the Ouglah of the Tibetans and the Yungla t'schamo of the Bhot, a favourite article of food.—*Hook. Him. Journ.* ii. p. 47.

CORUNDUM.

Kin-kang-shih, . . .	CHIN.	Samada, . . .	GUJ.
Adamantine spar, . . .	ENG.	Kurund, . . .	HIND.

Several substances, differing considerably in colour and sometimes in form, but nearly agreeing in composition, are classed together under the name of korund by the natives of India. This mineral is, with the exception of the diamond, the hardest substance known. It is generally of a pale grey or greenish colour, but sometimes of red and brown tints. It is found in India, China, and in some parts of Europe. The Indian variety is whiter than the Chinese, and is considered the purer. In India, diamond dust is very rarely used in polishing gems, marbles, and metals, corundum being the chief material employed. This mineral is found in granite, or the detritus of granite rocks in the Mysore country and in the neighbourhood of the S.W. Ghats. Though excessively hard, it is by no means tough,—it flies in pieces after a few strokes of the hammer, and is easily pulverized in a mortar. The natives generally powder it on an anvil or stone, keeping it from flying about by a collar of cotton rope. The fine particles are separated from the coarse by sifting; the European process of lixiviation is not seemingly resorted to. For sharpening swords or burnishing metals, it is generally used like a whetstone or burnisher; for polishing gems, it is either made up into a cake with lac, or into a paste with oil or grease. It is never employed for the manufacture of emery paper or anything resembling it. For polishing marble or other stone, it is used in two forms, viz. that of a cake of about eight inches long, three across, and two deep. This is used by an individual in the hand. For heavier purposes, a cake a foot square or so is employed, placed in a frame. Two men work at this, and the reducing process is very rapidly accomplished by it; it is in fact a file with a lac body and corundum teeth.

The corundums of the Madras Presidency are well known to the people, who use them in mass or mixed in lac; they are used by cutlers, etc., in the form of discs for laps, or wheel grindstones;

also, in the form of whets, and hones, and rag-stones, for sharpening the finer and coarser cutting implements used by farriers, etc. The first specimens sent to Europe were forwarded by Dr. James Anderson to Mr. Berry, a lapidary in Edinburgh, as the substance used by the people of India to polish masses of stone, crystal, and all gems, except the diamond, and it was then examined by Dr. Black, who named it adamantine spar.

The sites where corundum occur are—

Nannamul, Viralimodos.—On the north bank of the Cauvery, in the Permutty taluk.—*Newbold*. Sholasigamany (probably Scholasacrameny).

Trichingode taluk, near the village in a low hill, in great abundance.—*Newbold*.

Caronol, Aupore, Mallapollye, and at various localities up the river Cauvery as far as Corcorambodi in Permutty, where it is dug by the natives in the fields, and remains of many ancient excavations are to be traced.—*Newbold*.

Gopaluchetty pollium, 56 miles north of Salem.

Yalanerry.

Coondapady.

French Rocks.—*Captain Loudon*.

Golhushully, in the division of Nooghully.—*Newbold*.

Kulkairi, in the division of Chinrayapatam.

Burkunchully, in the division of Chinrayapatam.—*Newbold*.

Kundoo, in the division of Chinrayapatam.—*Newbold*.

Yedgunkul, in the division of Chinrayapatam.—*Newbold*.

Norhik, in the division of Narsipur.—*Newbold*.

Deysani Carbonhully, in the division of Banawaram.

Appianhully, in the division of Harnally.—*Newbold*.

Nullapardy, on the road to Bangalore, Mysore.

Mundium, in the Astagram division.

Cuddoor, in the Nuggur division.

Nuggur, in the Nuggur division.

It occurs also at Gudjelhutti in Coimbatore, at the Tapoor Ghat in Salem, at Chennimully in Coimbatore, and in Cuttack. At Nannamul and at Viralimodos on the north bank of the Cauvery; in the Permutty taluk, Salem district, it occurs embedded in gneiss and a greyish earth, resulting in part from the disintegration of that rock. It is found in great abundance in a low hill near the village of Sholasigamany, Trichingode taluk, Caronol, Aupore, Mallapollye, and at various localities up the river Cauvery, as far as Corcorambodi, where it is dug for by the natives in the fields; and there are the remains of many ancient excavations still to be traced. The caste usually employed in collecting it is the Vittaver. At the Madras Exhibition of 1855, Mr. Rohde exhibited specimens from Guntur, and remarked of them that experienced jewellers would pick out stones suited for common jewellery from it, and the refuse cannot be worth less than £15 and £20 a ton at home. From Hyderabad was received a very excellent sample of picked stones, possessing an irregularly crystalline structure. Professor Thomson mentions (*Mineralogy*, i. 213) that fibrolite is found accompanying crystals of corundum in the Karnatic, and that it is a component part of the granite which is the matrix of the corundum of China. Professor Jameson, in his *Geognosy of Peninsular India* (Ed. Cab. Lib. No. viii. p. 349-50), states that the corundum of Southern India occurs embedded in granite and sienite in the district of Salem, in the Madras Presidency, associated with Cleavelandite, Indianite, and fibrolite; but near Gram at Golhushully and Kulkairi, at which good corundum is obtained, the mineral occurs in decomposed beds of a talcose slate, to which gneiss is subordinate, associated with nodules of indurated talc, and of a poor quartz iron ore; asbestos, chlorite, actinolite, and schorl were

found in the talcose slate. Newbold mentions that in the Salem district, also, this mineral occurs embedded in gneiss and a greyish earth, resulting in part from the disintegration of that rock. Rubies, sapphires, emeralds, and topaz have from time to time been discovered in many of the corundum localities just enumerated, associated with this mineral, particularly in the gneiss at Viralimodos and Sholasiraman in the Trichingode taluk and at Mallapollye, though, comparatively speaking, rare. The formation around Gram is gneiss associated with protogene. Proceeding from it in a westerly direction, the northern shoulder of the insulated range, south of the village of Belladaira, running nearly north and south, is crossed, and the soil suddenly changes from a light sandy colour to a deep red. The surface of this soil is covered with fragments of a ferro-silicious schist, with quartz in alternate layers. The natives have a tradition that gold was formerly got from this hill, which is not at all improbable, as it is found in similar gangue near Baitmungalum. The corundum mines of Gollushully lie four or five miles north-east of this place, and those of Kulkairi about a mile farther. The surrounding country is a succession of smooth, slightly convex plains, except to the south-east, where the gneiss rises above the soil in a rocky ridge, terminating in a knoll about 700 yards to the east by south of the mines, to which it descends, rising again into a slope to west north-west of the mines, on which lie fragments of a light brown compact quartz iron ore. Nearly at the bottom of this stone are the mines, from which the ground descends on both sides to the north-west to a tank, and towards the south-east to the village of Gollushully, about a mile distant.

The chert and a dark-red ferruginous jasper are used by the natives as flints. Salt springs occur in the vicinity. The wells about Gram are both sweet and brackish within a short distance, and a fragment of rock-salt was found in the green earth of the mine. A little to the east of Kulkairi is a low plain nearly covered with a white travertine, partly compact, partly cellular, resembling that found in the bed of the Cauvery at Seringapatam. The corundum mines at Kulkairi are situated both near the summit and at the foot of the excavations of the rising ground there. There are a series of excavations varying from two to twelve feet in depth, sunk perpendicularly though similar strata to those just described. The corundum is thrown out, cleared, and separated by the miners into four classes, viz. the red, the white, the scraps of both, and the refuse. The three first form the article of commerce.

The corundum of Battagammana is frequently found in large six-sided prisms, is commonly of a brown colour, whence it is called by the natives *Curundu galle*, cinnamon stone; occasionally it is to be met with partially or entirely covered with a black crust, and is merely the stone with an unusual proportion of iron.

Corundum is found about eight miles S. from Sahapur, in the Singraula territory, about 120 miles from Mirzapore. It is found in masses as large as a man's head, on a ridge.

Common corundum occurs, like the sapphire and ruby, commonly in the secondary form of six-sided prisms, but usually much larger. It is sometimes nearly colourless, and rather trans-

lucent; it presents great variety, greyish, occasionally brown or red, rarely blue. It occurs also in acute and obtuse double six-sided pyramids.

Corundum pebbles are found in the gem-sand of Ava river.

Prismatic corundum, or chrysoberyl, is found among the Tora hills near Rajmahal, on the Bunas in irregular rolled pieces, small, and generally of a light green colour; these stones are considered by the natives as emeralds, and pass under the name of puuna, but they are aware that they are softer than the real emerald.—*Dana, Engl. Cyc.; Edward Balfour, Report for 1856 on the Government Central Museum, Madras; M. E. Jur. Rep.; Dr. Mason; Captain Newbold; Irvine, Gen. Med. Top. of Ajmir; Jameson, Ed. Journ. ii. 1820, p. 305.*

CORUNGA MUNJI-MARAM. TAM. *Rottlera tinctoria*.

CORUTTI. TAM. *Tricosanthes palmata*.

CORVIDÆ, the crow family of birds, sub-fam. *Corvinæ*, crows, magpies, nutcrackers. *Corvus culminatus*, *corone*, *corax*, *splendens*, *intermedius*, *Tibetanus*, *teuurostris*, and *frugilegus*, occur in India. The genus *corvus* has no representative in all South America, nor in New Zealand, nor in the numerous archipelagoes of the Pacific, and there is one species only in Australia. *Corvus corax*, the raven, takes the circuit of the northern regions; rare in N. Africa, Panjab, Kashmir, Afghanistan. The true raven is pre-eminently a bird of the coldest climates; though a few occur so far southward as in the Barbary States, in America so low as in the Carolinas, and in India proper within the Panjab only. The raven, remarks Sir John Ross, is one of the few birds that are capable of braving the severity of an arctic winter. In the fearful cold of a northern Siberian winter, Von Wrangell says, the raven still cleaves the icy air with slow and heavy wing, leaving behind him a long line of thin vapour, marking the track of his solitary flight. The Tibetan raven is considered as a peculiar species by Mr. Hodgson, an opinion to which the Prince of Canino seems to incline; it may be presumed to inhabit the lofty mountains of Bhutan to the north. The smaller crow of Southern Asia is the *C. splendens*; the common black crow of all India is *C. culminatus*. The true rook, *C. frugilegus*, is known to visit the Peshawur valley, Afghanistan, Kashmir (the rook of China and Japan being considered a distinct species, *C. pastinator* of Gould); and the jackdaw, *C. monedula*, accompanies it in those countries. *C. advena* is a rare black and white crow, occurs along with *Cittura cyanotes*, the forest kingfisher of Celebes. *C. corone* is the carrion crow of Europe, Afghanistan, Japan; *C. cornix*, hooded crow of Europe, Asia Minor, Afghanistan, Japan (*Temminck*), Barbary; *C. monedula*, the jackdaw of Europe, Siberia, Barbary, W. Asia, Peshawur valley, Kashmir. A nutcracker and a magpie occur in the Himalaya.

CORVINUS, a genus of fishes, several species of which, *C. bola*, *C. chaptis*, and *C. coitor*, furnish isinglass. *C. bola*, *M'Clell.*, *Bolo chaptis*, *Buch.*, furnished the isinglass which Mr. O'Riley sent to Calcutta from Amherst. It is closely allied to *C. niger*, but of monstrous dimensions compared with the European species. The jawbone of this fish is described as Boalee.—*Mason; M'Clelland.*

CORYATE, THOMAS, a native of Britain, a

most singular traveller. After publishing, in 1611, his most laughable travels, styled *Coryate, His Crudities*, prefaced by above forty copies of verses by the waggish wits of the time (amongst which is one in the ancient British language), he set out on his greater travels, and seems to have been buried at the port of Swally, near Surat, in December 1617.—*Pennant's Hindoostan*, i. p. 73.

CORYDALIS AMBIGUA. *Smith.*

Yen-hu-soh, . . CHIN. | Huen-hu-soh, . . CHIN.

A Chinese plant belonging to the sub-order *Fumareæ*, the fumitory tribe; its tubers are used medicinally in hæmaturia.—*Smith.*

CORYDALIS GOVANIANA. *Wall. Bhootkes, HIND.* Is common above 8000 feet of elevation in the Choor mountains, where it is regarded as a charm against evil spirits. The roots sent by Dr. Falconer were long, fibrous, tough, and exceedingly bitter, dark brown externally, yellow within.—*O'Shaughnessy.*

CORYDON SUMATRANUS, a singular and rare bird; it is crepuscular, very likely diurnal as well, and so stupid or tame as to allow itself to be pelted without moving.

CORYGAUM, a small village on the left bank of the Bhima river, half-way between Poona and Seroor on the Gor-naddi. It is memorable for the defence made on the 1st of January 1819, by a small body of Madras artillery and native infantry about 500 strong, against the entire army of Baji Rao, Peshwa. About 4000 Arabs continued the attack from daybreak till dark. Surgeon, afterwards Sir James Wylie, of the Madras Medical Department, greatly aided in their repulse. Captain Staunton of the Bombay army, with the 2d battalion of the 1st Bombay Native Infantry, mustering 600 bayonets, 26 of the Madras Artillery under Lieut. Chisholm, and 300 Auxiliary Horse under Lieut. Swanston, in all 926 strong, on New Year's eve were ordered to Poona to join Colonel Burr's brigade. On New Year's morning of 1818, as he approached Corygaum, he saw the army of the Peshwa, consisting of 20,000 horse and 8000 foot, covering the plain beyond. Both parties made a rush to seize the village, but entered it together at different ends. All day long the strife was kept up, fresh bodies of Arabs coming from the enemy to take the place of those who fell. Of the eight officers, Lieutenants T. Pattinson and Chisholm and Dr. Wingate were killed or mortally wounded. Captain Staunton and Dr. Wylie were amongst those who survived, but 175 had fallen. The E. I. Company voted Captain Staunton a purse of 500 guineas and a sword of honour, and afterwards erected a granite obelisk, 70 feet in height, with the names of all the brave men who fell, engraved on it in English, Persian, and Mahratta. Assistant-Surgeon Wylie was afterwards created a K.C.B.

CORYLUS AVELLANA, the European hazel, is abundant in the Himalaya. Fruits (nuts), called Bindik and Finduk in bazars, are grouped in clusters together, inodorous, taste sweet and agreeable, become rancid very quickly. By expression the kernel yields a very agreeable oil, nearly in the proportion of half its weight. The wood of the hazel was the material of the divining rods of the magicians and snake enchanters, who even in modern times have had their believers in Europe. The Japan hazel is *C. heterophylla*, *Fischer*; *C. ferox*, *Wall.*, is a plant of the Simla hills.—*O'Sh.*

CORYLUS COLUMNA. *Linn. Hazel.*

O. Jacquemontii, Dne.

Var. B. *Lacera.*

Var. C. *Lacera, Wall.*

Hazel,	ENG.	Jhangli, Thangoli, PANJ.
Urrvi, Urni, Geh, . .	PANJ.	Sharoi, Sharoli, . .
Ivinri, Ivuria, War, . .	"	Shurlige, Bankimu, . .

This tree grows to a height of 40 feet at elevations of 5500 to 10,500 feet in the Panjab Himalaya. Wood elastic, light and compact, used for hoops and walking-sticks. The nuts edible.—*Drs. Cleghorn and J. L. Stewart.*

CORYNOCARPUS LÆVIGATA, a New Zealand tree with beautiful evergreen foliage; the pulpy portion of the fruit is eaten by the natives.

CORYPHA, a genus of palms of the order *Cocoacæ*. Sec. D. *Coryphæ*, *C. elata* and *C. taliera* grow in Bengal; *C. rotundifolia* and *C. utan*, in the Moluccas; *C. umbraculifera* in Ceylon and the Moluccas, and *C. gebanga* in Java. It seems to be *C. gebanga* which Mr. Wallace (p. 158) describes as a great species in Lombok, called Gubbong, which grows there in great abundance. He says it has a lofty cylindrical stem, about a hundred feet high and two or three feet in diameter. *C. taliera*, the Tara of Bengal, and the Talipat of the Peninsula, is much employed for making leaf hats and leaf umbrellas; the leaves, when smoothed, are much used for writing on, and also for tying the rafters of houses, as they are strong and durable. *C. umbraculifera*, the coddapanna of Madras and the talipat of Ceylon, and very like the former, is common in Ceylon, and found also on the Malabar coast. The dried leaf is very strong and limber (Knox's Ceylon). The Burmese books are all made of the leaf of a species of *Corypha*. *C. australis* is the cabbage-palm of the northern part of Australia to Port Jackson. It rises erect to 70 or 100 feet, with a diameter of 1 foot.—*G. Bennett; Seeman; Royle, Fib. Pl.; Voigt; Wallace*, 158.

CORYPHA ELATA. *Roxb.*

Taliera elata, Wall. | Bujoor, Bujur, Batool, BENG.

This stately palm grows in Bengal, and, according to Mr. Mason, in the Tenasserim Provinces. It has a straight trunk, but often varying in thickness. A tree about thirty years old, when in flower, was seventy feet to the base of the inflorescence, another about sixty; circumference near the root, eight feet, and about the middle of the trees five and a half or six; their whole length strongly marked with rough, dark-coloured spiral ridges and furrows, which plainly point out the spiral arrangement of the leaves. The ligneous fibres, as in the order, are on the outside, forming a tube for the soft spongy substance within, of a dark chocolate colour, tough and hard, but by no means equal, in either quantity or quality, to the very serviceable wood of *Borassus flabelliformis*. This palm, in Bengal flowering in March and April,—the seeds require about twelve months to ripen,—is to be at once recognised by its black spirally-marked trunk. From the other species of *Corypha* it is abundantly distinct by its long obviously spirally placed ex auriculate petioles, and by the smaller dark-green flat lamina, with narrow linear-ensiform segments. The fruit is smaller.—*Voigt; Mason; Roxb.* ii. 176.

CORYPHA GEBANGA, *Blume*, is one of the most useful of all the palms of South-Eastern Asia. Its pith furnishes a sort of sago. In Java, thousands of boys and girls are employed in

fabricating its leaves into baskets and bags; thatch and broad-trimmed hats are made of them; fishing-nets and linen shirts are woven from its fibres, and ropes from its twisted leaf-stalks; the root is both emollient and slightly astringent; and Waitz says it is a valuable remedy for the periodical diarrhoea which in the East Indies attacks Europeans. It flowers in a huge terminal spike, on which are produced masses of a small round fruit, of a green colour, and about an inch in diameter. When these ripen and fall, the tree dies, and, after standing a year or two, it too dies. Flocks of green pigeons and troops of the *Macacus cynomolgus* monkeys resort to the trees when fruiting, the latter chattering and showering down the ripe fruit. Kurz joins *C. elata* to this.

CORYPHA TALIERA. Roxb. ii. 174.

Taliera Bengalensis, Spreng.

Tala, Taliera, Tariat, BENG.	Sri talam, . . . SANSK.
Taliera, . . . HIND.	Talipat, . . . SINGH.
Tali, . . . MART.	Sri talani, . . . TEL.

An elegant, stately palm of Bengal, has a trunk, perfectly straight, about thirty feet high, and, as near as the eye can judge, equally thick throughout, of a dark brown colour, and somewhat rough with the marks left by the impression of the fallen leaves. It grows in Bengal, but it is scarce in the vicinity of Calcutta. It flowers at the beginning of the hot season, the seeds ripen nine or ten months afterwards. It is so closely allied to *C. umbraculifera*, as to be difficult to distinguish when out of flower. The leaves are much employed for making leaf hats and leaf umbrellas, and for tying the rafters of houses. They are in about 80 divisions, each 6 feet long by 4 inches broad, radiating from the point of a leaf-stalk from 5 to 10 feet long, and covered with strong spines at its edge. Roxburgh describes the spadix as decompound, issuing in the month of February from the apex of the tree and centre of the leaves, forming an immense diffuse ovate panicle of about 20 or more feet in height. The fruit is the size of a crab-apple, wrinkled, dark olive, or greenish-yellow. The leaves are used by the natives of India to write upon with steel styles; it is known as the book palm, and is not unfrequent in the neighbourhood of religious edifices in the Tenasserim Provinces.—Roxb. ii. 174; Voigt; Eng. Cyc.; Mason.

CORYPHA UMBRACULIFERA. Linn.

Tali, . . . BENG.	Tala or Tala gass, SINGH.
Pa, . . . BURM.	Konda pannamaram, TAM.
Fan palm, Talipat, ENG.	Sidalam, . . . TEL.
Kodapana, . . . MALEAL.	

The talipat palm of the Moluccas, Malay coast, Malabar, and Ceylon, is similar in appearance to, but its leaves are not so round as, those of *C. taliera*, the divisions in the centre being shorter than those at the sides. It has a stem 60 or 70 feet high, crowned with enormous fan-shaped leaves, forming a head 40 feet in diameter, each leaf with 40 or 50 pairs of segments. These fronds, when dried, are very strong, and are used for hats and umbrellas. The petiole is 7 feet long, and the blade 6 feet long and 13 feet broad. Fans of enormous size are manufactured from this plant in Ceylon. The bole is wholly pith, which furnishes a sort of flour, of which bread is made; the leaves make excellent thatch, and are also used for writing on, like those of the *C. taliera*. Griffith met with trees in flower at Mergui, which he thought belonged to

this species; and Dr. Mason saw trees in Tavoy, which he regarded as probably talipat palms. The dark-coloured roundish seeds of these trees are used as beads by the Tader or Dasari religious mendicants. *C. umbraculifera* is found also on the Malabar coast. The dried leaf is very strong and limber, and, according to Knox, is 'most wonderfully made for men's convenience to carry along with them; for though this leaf be thus broad enough to cover fifteen or twenty men when it is open, yet it will fold close like a lady's fan, and then it is no bigger than a man's arm; it is wonderfully light.'—Knox's Ceylon, in Royle's Fib. Pl.; Seeman; Eng. Cyc.; Mason; Roxb.; Voigt. Kurz joins *C. taliera* to this.

CORYPHA UTAN. Lam.

Taliera sylvestris, Bl. | *Lontarus sylvestris, Ru.*

A palm of the Moluccas.—Roxb. ii. 178.

CORYPHÆNA, a genus of fishes belonging to the section Acanthopterygii, family Scombridae, and fifth group Coryphænina. There are nine genera in the group; one of them, *Coryphæna*, has six species. *C. hippuris*, Linn., is the dolphin or dorado, and is often confused with the delphinus or porpeso, from its bearing the same name. Its colours when swimming are very lively, and tail of a golden yellow. When dying it presents a greatly varied play of colours. It is good for eating.—Bennett.

CORYPHODON BLUMENBACHII, the rat snake of Ceylon, is almost domesticated in households.—Tennent, p. 42.

COS, a little Dorian island on the coast of Asia Minor, which fell under the power of Ptolemy. It was the first spot in Europe into which the manufacture of silk was introduced, which it probably gained when under the power of Persia before the overthrow of Darius. The luxury of the Egyptian ladies, who affected to be overhented by any clothing that could conceal their limbs, had long previously introduced a light thin dress; and for this, silk, when it could be obtained, was much valued; and Pamphila of Cos had the glory of having woven webs so transparent, that the Egyptian women were enabled to display their fair forms yet more openly by means of this clothing. Occasionally, also, they sent their treasures and their children there as to a place of safety from Alexandrian rebellion; and there the silk manufacture flourished in secret for two or three centuries. When it ceased is unknown, as it was part of the merchants' craft to endeavour to keep each branch of trade to themselves.—Sharpe's Aristotle, Hist. An. V. 19; Hist. Egypt, i. p. 263.

COSCINIUM FENESTRATUM. Coleb.

Menispermum fenestratum, Gartin.

Turmeric tree, . . . ENG.	Huldi-ka-jhar, . . . DUKH.
Mara munjil, . . . TAM.	Mani-pasupu, . . . TEL.

A creeping plant of Ceylon and S. India.

COSI, a river of the Himalaya, is formed from seven alpine feeders, the Sapt Cusi of the Nepalese, which unite within the Himalaya mountains. Bengal has a river of the same name, with the town of Midnapur on its bank.

COSMAS, called from his maritime experiences Indicopleustes, was apparently an Alexandrian Greek, who wrote between 530 and 550. He was the first Greek or Roman writer who speaks of China in a matter-of-fact manner, by a name which no one has ever disputed to mean China.

He was a monk when he composed the work

which has come down to us, but in his earlier days he had been a merchant, and in that capacity had sailed on the Red Sea and the Indian Ocean, visiting the coasts of Ethiopia, and apparently also the Persian Gulf, and the western coasts of India, as well as Ceylon. His book was written at Alexandria (A.D. 535), and is termed *Topographia Christiana* (Universal Christian Topography), the great object of it being to show that the tabernacle in the wilderness is a pattern or model of the universe. Sir J. E. Tennant (Ceylon, i. p. 542) says that Cosmas got his accounts of Ceylon from Sopatrus, whom he met at Adule; and Lassen ascribes all Cosmas says of India to the same authority (ii. 773). But they have not given the ground of these opinions. One anecdote is ascribed to Sopatrus, no more. He gives a clear account of the commerce between India and Egypt in his day. He says that the produce of Kalliana was brass, sesamine logs, and cotton stuffs; of Sindus, castorin and spikenard; of Male (Malabar), pepper; and that from Tzinitza (China) and other countries beyond Siediba or Taprobane, came silk, aloe-wood, cloves, nutmegs, and sandal-wood. Writing of the island of Taprobane in Further India, Cosmas says where the Indian Sea is, there is a church of Christians, with clergy and a congregation of believers, though I know not if there be any Christians further on in that direction. And such also is the case in the land called Male, where the pepper grows. And in the place called Kalliana there is a bishop appointed from Persia, as well as in the island which they call the Isle of Dioscoris, in the same Indian Sea. The inhabitants of that island speak Greek, having been originally settled there by the Ptolemies, who ruled after Alexander of Macedon. This Male is evidently Malabar, probably the Kalliana of the Periplus, which Lassen identifies with the still existing Kalyani on the mainland near Bombay. Father Paolino, indeed, will have it to be a place still called Kalyanapuri on the banks of a river two miles north of Mangalore, but unreasonably.—*Via Galle, Indie Orientale*, p. 100, in *Yule, Cathay*, i. p. 171.

COSMETIC BARK. The fragrant bark of *Murra paniculata*, a tree indigenous in Burma above Rangoon, is more used for a cosmetic than sandal-wood. It is a very ornamental fragrant flowering shrub of the citron tribe.

Cosmetic Powders, Dusting-powders.

Puh-fen, Shwui-fen, CHIN. | Fu-yung-fen, . . CHIN.
P'ing-shie-kung-fen, „

In China, the shells of several molluscs are washed, scraped, calcined, and levigated, and scented with musk or other ingredients. The addition of Borneo camphor makes these powders exquisitely cooling to the skin, especially if troubled with prickly heat. Water is used with the Shwui-fen, in laying it on the face. An inferior cosmetic wood of Burma, is the tubercle of some plant. The Burmese appear from their name to regard them as produced by a species of erythrina, for they call them *erythrina thorns*; but Mr. Mason suspected that it is *Toddalia aculeata* and *T. floribunda*. The cosmetic wood of Mergui from one of the *Xanthoxylaceæ*? is fragrant. It is sold in the bazar.—*Mason; Smith*. See Abir.

COSS, the itinerary measure of India, of which the precise value has been much disputed, chiefly on account of the difficulties which attend

the determination of the exact length of the guz or yard. The Ayin-i-Akbari lays down distinctly that the coss consists of 100 cords (tunab), each cord of 50 guz; also of 400 poles (bans), each of 12½ guz; either of which will give to the coss the length of 5000 guz. The distances in English yards between the old minars or coss pillars may be considered to afford the correctest means we have of ascertaining the true standard, viz. :—

	By Road.	Direct.
Octagonal minar to Nurelah in Delhi,	4513	4489
Minar between Nurelah and Shapurghurhi,	4554	4401
Minar opposite Alipur,	4532	4379
Minar opposite Sirapur,	4579	4573
Ruins of Minar opposite to Shallmar,	4610	4591

Length of the coss, 2 miles 4 furlongs 158 yards. It is important to observe that the length of the Ilahce guz, deduced from the measurements, is 32·818 inches, showing how very nearly correct is the length of 33 inches assumed by the British Government. The Chinese li is the distance which can be attained by a man's voice exerted in a plain surface; and the same may be remarked of the oriental meel, as well as the European mile and league. The two former evidently derive their names from the Roman milliare, and the difference of their value in different places proves that the mere name was borrowed, without any reference to its etymological signification. Coss is an Indian word; the equivalent word in Persian is Kuroh, the same as the Sanskrit Korosa, of which four go to the yojan. Malcolm says the coss is in general estimated at forty-two to the degree; but its length differs in almost every province of India. It may be computed as never under a mile and a half, and never (except in that introduced by the mandate of the late Tipu Sultan in Mysore) more than two miles. In Gujerat they estimate the coss by the lowing of kine (gao), which in a still day may be heard at the distance of a mile and a quarter. Thus twelve coss is baragao.—*Elliot, Supp.*; *Malcolm's Central India*, i. p. 20. See Ilahce Guz.

COSSACK, an irregular soldiery whom the Russian Government recruited from the country at the foot of the Caucasus, known as Little Kabarda and Great Kabarda, bordering on the Malka and Kouma rivers. Cossack (Kazak) is also a term by which the Mahrattas described their own mode of warfare. In their language, the word Cossakee, borrowed, like many of their terms, from the Moghuls, means predatory.—*Malcolm's Central India*, i. p. 69. See Kabarda.

COSSÆA or **Cissia** is the name by which the Greeks knew the tract east of the Tigris. It was also called Elam or Elymais. It is now called Khuzistan. Cossma is supposed to be derived from Koh-siah, or Black Mountain. The people spread their conquest over Susiana and the districts eastward. See Luristan.

COSSEIR or **Kosseir**, a town and harbour on the western side of the Red Sea. It was occupied by the French in their expedition to Egypt, and then by the British. Kosseir harbour is open to the east, but on the north reefs advance into the sea; on the south is a chain of mountains of some elevation. The bottom is rocky.

COSSID, **PERS.**; properly Kassid. A mounted messenger.

COSSYA HILLS, or **Khassya Hills**, estimated area 7290 sq. miles, 80 miles in length from N. to S., and 40 in breadth, extend from lat. 24° 35'

to 26° 7', and from long. 91° 35' to 92° 4'. About 16 miles on the Sylhet side, and about the same on that of Assam, consists of lowland interspersed with small hills. In the interior, about 50 miles in extent, is an undulating hilly table-land, from 1500 to 2500 feet high. The localities admitting of cultivation are the plateaux of the Cossya and Jaintia hills, the lower ranges on the Assam border, and the slopes towards the Sylhet plains. The area of the three plateaux is about 3500 square miles, and their heights vary from 3000 to 6000 feet above sea-level. The soil is a ferruginous red clay, with a subsoil of shingle, little qualified for profitable cultivation. In the hollows, however, a fine black mould is found, extending often over many acres. The population of the Jaintia hills is about 40,000 souls, and of the Cossya hills about 82,400. The Cossya states are twenty-five in number, of which five, Cherrapunji, Khyrim, Nusting, Sungree, and Nuspoong, are commonly called the Semi-independent States. The chiefs exercise civil and criminal jurisdiction over their own people in all matters pertaining exclusively to them. The minor states, known as the Dependent States, are twenty in number, the chief of which is Nungklow.

Moleem was conquered in 1829, and the raja of Khyrim ceded to the British the territory to the S.E. of the Oomean or Booga Pane river. In 1861 the raja was deposed, and Malay Singh, a new chief, installed. Agreements have been entered into with Mowyang in 1829, Dowarrak Notoormen in 1837, Soopar Punji in 1829, and in 1860 with Bhawal.—*Aitcheson's Treaties*, etc. See *Cairns*, p. 543.

COSTUS.

Kust; Koshta, AR., BENG. | Koot, KAHHM.
Putchuk, HIND. | Koosht-i-Sherin, . . . PERS.

A fragrant substance, highly prized by the ancients. It was supposed by Dr. Falconer to be the produce of a genus of the Compositæ or thistle tribe, to which he gave the name of Aucklandia. He found it growing in great abundance all round the elevated summits of Kashmir. He considered it could be produced to an unlimited extent, of the best quality, in the Himalayas, at elevations of from 7500 to 9000 feet above the sea. The roots are dug up in September and October, when the plant begins to be torpid; they are chopped up into pieces from two to six inches long, and are exported without further preparation,—the quantity annually collected amounting to about two million pounds. The cost of its collection and transport to Kashmir is about 2s. 4d. the cwt. From Bombay it is shipped for the Red Sea, the Persian Gulf, and China: a portion of it is taken to Calcutta, and bought up there with avidity under the name of putchuk. The value at Jugadree on the Jumna is about 16s. 9d. or 23s. 4d. per cwt. The exports from Calcutta were:—

1841–42, 12,847 cwt. | 1848–49, 2110½ cwt. worth
1847–48, 2,050½ „ | about £1500 annually.

In the Chinese ports it fetches nearly double that price per cwt. The Chinese burn the roots as an incense in the temples, and regard it as aphrodisiac. The import into Canton in 1848 was 414 pikuls, and in 1859 was 854 pikuls, and valued at 5150 dollars. In Kashmir it is chiefly used for the protection of bales of shawls from insects.—*Royle*, p. 360; *O'Shaughnessy*, p. 652; *Simmonds*.

COSTUS SPECIOSUS. Roxb., Smith.

Banksia speciosa, Koen. | Amomum hirsutum, Lam.
Costus Arabicus, Linn. | Tsjana speciosa, Gmel.
Hellenia grandiflora, Retz. | Herba spiralis hirsuta, Ru.

Kio, Kiu, . . . HIND., BENG. | Pushkara mulamu, TEL.
Kut talkh, Kutkarwa, H. | Bomma kaachika, . . .
Janakua, MAJAL. | Kasmiramu,
Kimuka, Kembo, SANSK. | Kimuka koshtamu, . . .
Tebu gass, SINGH. | Kroshtamu,

A very elegant plant found near the banks of rivers and other moist and shady places in Southern India, Cochin-China, the Moluccas, and Sunda islands. *Costus Nepalensis*, *Roscoe*, *C. speciosus*, β angustifolius, grows in Nepal.—*Roxb.* i. 58.

COTE or Kot. VERN. A fort, a castle; in which sense we find it frequently used in names of places as Cote-Putli, Cote-Salbahun, Shere-Cote, and Kot-Kangra. It is derived from the Sanskrit Kotta, which Klaproth tells us, being adopted into the Mongol, became the origin of the name of Khoten. We may probably look to the same word for the English Cote and its numerous derivatives, as sheepcote, Cotswold, etc.—*Elliot, Supp. Rel. des Roy; Budd.* p. 18.

COTI, the complement of an arc to 90°; also one of the sides of a right-angled triangle. Sudda coti, the sine. Cotijya, the co-sine of an angle in such a triangle.

COTONEASTER OBTUSA. Wall.

Riu, rau, CHENAB. | Riu, risk, RAVI.
Liau, lillun, „ | Sichu, SUTLEJ, RAVI.
Luni, JHELUM. | Reus, ri, SUTLEJ.
Lin-klariz, KANORA. | Kheroa, kheraba, TR.-IND.

This and *C. rotundifolia*, Wall., have the same vernacular names. The two species are most common from 4000 to 10,500 feet in the Panjab Himalaya. Their wood, though small, is tough and strong, and is much used for axe handles and walking-sticks, and it is said for jampan poles. In Kashmir the twigs are extensively employed for basket-making, and are frequently mixed with Parrotia (*q.v.*) for the twig bridges.—*J. L. Stewart, M.D.*

COTTA KALANG. TAM. Aponogeton monostachyon, *Thunb.* Grows in the beds of tanks. Root eaten in Kaffraria as a great delicacy; it is relished by the natives of India.—*Ainslie*, p. 248.

COTTAMALLI. TAM., TEL. Coriandrum sativum; coriander seed.

COTTON. Sir Dodmore Cotton in 1627 was sent as Ambassador from the king of England to Shah Abbas of Persia.

COTTON, GENERAL SIR WILLOUGHBY, K.C.B. and G.C.B., born 1783, died in London on May 1848, only son of Admiral Cotton, cousin of Lord Combermere. In his 16th year he entered the 3d Guards as ensign. He commanded a division of Sir Archibald Campbell's army in the Burmese war. He commanded the 1st division of the Bengal army in the Afghan war in 1838–39, under General Sir Henry Fane, and afterwards under General Sir John Keane. He was present at the storming and capture of Ghazni on the 23d of July 1839, at which he commanded the reserve which entered the city after the storming party had established themselves inside. He received the Order of the Bath of all the grades, being nominated a Grand Cross of that order in 1840. He was made a Knight Commander of the Royal Hanoverian Guelphic Order in 1830, and had conferred upon him the Order of the Dooranee

COTTON.

Empire of the 1st class at Kabul, in September 1839.—*Men of the Time.*

COTTON.

Kutun; Qatan, . . . ARAB.	Kob-ung, . . . MONGOLIA.
Pl-hwa-jung, . . . CHIN.	Pumba, . . . PERS.
Mien-hwa-jung, . . . "	Bawelna, . . . POL.
Sz-mien; Hoa-mien, . . . "	Algodofo; Algodeiro, PORT.
Bomuld, . . . DAN.	Chlopts-chateja, . . . RUS.
Boomwol; Katoen, DUT.	Karpasa, . . . SANSK.
Coton, . . . FR.	Kapu, . . . SING.
Baumwolle; Kattun, GER.	Algodon, . . . SP.
Boubaki; Bomaga, . . . GR.	Bomül, . . . SW.
Kapas; Rui, . . . HIND.	Punji; Van-paratie, TAM.
Cotone; Bombagia, . . . IT.	Patti (in the pod); Dudi,
Gossypium, . . . LAT.	TEL.

Cotton consists of the delicate, tubular, hair-like cells which clothe the seeds of species of *Gossypium*. Its commercial value depends on the length and tenacity of these tubular hairs, which, in drying, become flattened, and are transparent, without joints, and twisted like a corkscrew. Under water, they appear like distinct, flat, narrow ribbons, with occasionally a transverse line, which indicates the end of cells.

In America, two distinct varieties are indigenous,—*G. Barbadosense*, yielding the cotton from the United States, and *G. Peruvianum* or *acuminatum*, that which is produced in South America. India also has two distinct species,—*G. herbaceum*, or the common cotton of India, which has spread to the south of Europe, and *G. arboreum*, or tree cotton, which yields none of the cotton of commerce.

Cotton plants have been characteristic of India from the earliest times; and at the present day the majority of its people are clothed with fabrics made from cotton, which is woven to a large extent in India, but more largely in Europe and America. Indigenous varieties in the tropical regions of Asia, Africa, and America, and in the southern provinces of the United States, have been cultivated with such success, that its produce is an important article of commerce.

Dr. Cleghorn compared all the species of *Gossypium* in the herbarium of the Botanical Society (comprising the collections of Buchanan Hamilton and Lady Dalhousie, with contributions from Drs. Wight, Campbell, etc.), and also those in the herbarium of Professor Balfour, with a view to explicate the specific characters by which to discriminate them from one another. The series showed the striking difference which soil, climate, and culture produce in species, and which may appear in nature, giving rise to a multiplication of species. But the whole group of so-called species seemed to him referable to *G. herbaceum*, *Linn.*, *G. arboreum*, *Linn.*, *G. Barbadosense*, *Linn.*, and *G. acuminatum*, *Roxb.*

Since 1790, efforts to improve the Indian cotton crops have been almost continuous. Experienced planters from America were employed, and Drs. Wight and Watson were long engaged in experiments in Coimbatore, Gujerat, and Dharwar. The plant has always been grown in almost every district of India, for local use or export, in soils suitable and unsuitable to its growth; and at the London Exhibition of 1862, the values of 138 samples exhibited ranged from sixpence to three shillings the pound.

Mr. Shaw says (p. 186, Cotton Report) cotton cultivation in India would not be a profitable speculation for Europeans; the natives can grow

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it much cheaper. Our function is simply that of buyer. We have no local market for the American cotton. It does not answer for native spinning so well as their own.

The use of cotton dates from a very early period. Sanskrit records carry it back at least 2600 years, while in Peruvian sepulchres cotton cloth and seeds have been found. It is noticed in the book of Esther, i. 6, where its Sanskrit name Karpas is translated 'greens' in the English Bible. Herodotus and Ctesias notice it; but it was not till the invasion of India by Alexander that the Greeks were acquainted with the plant, as may be seen in Theophrastus, and also in Pliny.

Pliny, writing about 500 years subsequent to the time of Herodotus, mentions (lib. 19, c. 1) that the upper part of Egypt, verging towards Arabia, produces a small shrub which some call *Gossypium*, others *xylon*, and from the latter the cloth made from it, *xylina*, bearing a fruit like a nut, from the interior of which a kind of wool is produced, from which cloths are manufactured inferior to none for whiteness and softness, and therefore much prized by the Egyptian priesthood.

The varieties of cotton known in the commercial world may be referred to three distinct species, each having several sub-varieties. The *Gossypium Barbadosense* is the species cultivated in the West Indies, North America, and in one or two parts of the Peninsula of India. *Gossypium Peruvianum* yields the cotton of Brazil, Pernambuco, Peru, etc. *Gossypium Indicum* is the species which, in a number of varieties, produces the great bulk of the cotton of India and China. The *Gossypium arboreum*, or tree-cotton of India, and peculiar to India alone, is unfitted for manufacturing purposes, and is unknown to commerce, though yielding a beautifully soft and silky fibre, admirably adapted for padding cushions, pillows, etc. In commerce, Indian cotton has usually been known under the names of the locality of its growth or place of shipment. The staple of these sorts appears to range from 0.85 to 1.1 of an inch in length; the staple of the celebrated Sea Island cotton being usually 1.5 in length.

The three qualities by which the value of cottons are determined are, length of staple, strength of fibre, and cleanness of sample. Colour, which at one time was thought much of, is no longer looked upon as a matter of moment. The respective lengths of the different kinds of cottons are given by Mr. Clements Markham as under:—

	Minimum.	Max.	Mean.
Sea Island,	1.41 in.	1.80 in.	1.61 in.
Egyptian,	1.30	1.52	1.41
Peruvian,	1.10	1.50	1.30
Brazilian,	1.03	1.31	1.17
New Orleans or Uplands,	0.88	1.16	1.02
Uplands grown in India,	0.95	1.21	1.08
Indigenous Indian cotton,	0.77	1.02	0.89

The cotton of India is allowed to be inferior as regards its staple and purity, but in durability it at least equals the produce of any part of America, and of this fact the Hindus are themselves perfectly aware. Dr. Royle gives 3 distinct varieties of cotton, all indigenous to Hindustan. The common description is found scattered more or less throughout India, reared as a triennial or annual. It reaches the height of 5 or 6 feet in warm, moist climates. The seeds are five in number, clothed with a short greyish down. In the Peninsula there are two distinct varieties of this sort, known amongst

the natives as Oopum and Nadum. The first thrives only on the richest black soil, and is an annual, producing a fine staple; the latter is a triennial plant, and grows on the poorer red soil, yielding small crops of inferior quality.

Second.—Dacca cotton is a distinct variety of the *Gossypium Indicum*. It differs from the previous variety in the plant being more erect, with fewer branches, and tinged with a reddish hue, whilst the cotton is finer, softer, and longer. This variety is reared more or less extensively throughout Bengal, especially in the Dacca district, where it is employed in the manufacture of the exquisitely fine muslin cloths known over a great part of the world as Dacca muslins, and whose delicacy of texture so long defied the imitation of the art-manufacturers of the West.

A *third variety* is the cotton grown in Berar, in the northern provinces of the Madras Presidency, and in Surat and Broach. This plant attains a greater size than the preceding, bears for a longer period, and produces a fibre of a finer quality than the former. It appears to thrive best on a light black soil.

Soil.—The soil in which all these Indian varieties thrive may be classed under two distinct heads, the *black cotton soil* and the *red soil*. The former of these, as its name indicates, is of a black or deep brown colour, absorbs and retains much rain, forming in the rains a heavy tenacious mass, and drying into solid lumps in the hot months. An analysis of this gives 74 per cent. of siliceous matter, 12 of carbonate of lime, $7\frac{1}{2}$ of protoxide of iron, 3 of alumina, 2 of vegetable matter, and $\frac{1}{2}$ salts, with a trace of magnesia. The *red soil* of India has been found in some localities better suited to the growth of cotton than the black earth. It is a rather coarse yellowish red soil, commingled with particles of the granitic rocks,—siliceous matter, felspar, and aluminous earth. It mainly differs in composition from the preceding in the iron existing in the state of peroxide or red oxide, whilst the carbonate of lime is found present in greater abundance. Analyses of the best cotton soils of America prove that they differ from those of India chiefly in the large proportion of peaty matter which they contain.

Cotton-wool bears value according to its colour, length, strength, and fineness of fibre. Pure whiteness is generally held to denote a secondary quality; whilst a yellowish tinge, provided it be not the result of casual exposure to damp, or the natural effect of an unfavourable season, is indicative of superior fineness. Many varieties of raw cotton are seen in commerce, each sort being distinguished by the name of the locality where it is produced. American, Bourbon, Egyptian, Amraoti, Dacca, Oopum, Nadum, Orleans, Sea Island, etc. etc.; but the main distinction recognised is that between the long and short stapled qualities; though of these, again, there are different degrees of excellence. The 'Sea Island' cotton of Georgia (so named from being raised on certain narrow sandy islets lying along the coast of that province) is esteemed the best of the long-stapled kind; and the upland produce of the same state excels amongst the short-stapled classes. The indigenous Asiatic cotton is exclusively of the latter class.

The indigenous plant of India is an annual, and succeeds best in the rich black soil that charac-

terizes various districts. The American plant, though in reality perennial, is practically an annual in India; for in India neither native nor foreign cotton is cultivated on the same ground more than one year in three, its properties being found to exhaust the productive powers of the soil. American cotton grows well on the black soil of India, but thrives still better on the light red lands. Each of these species possesses advantages peculiar to itself. The Indian variety is capable of being manufactured into fabrics of extraordinary durability and wonderful fineness; its colour, too, is superior, but the staple short. The American species, on the other hand, excels in length of staple. The plant yields more flowers, and each flower a larger pod, whilst the quantity of seed contained in the pod is smaller, and more readily separated from the fibre.

Mr. Laing, in a letter to *The Times* as to the future supply of Indian cotton, showed that Sir C. Wood makes it entirely a question of price, citing the authority of Lord Hardinge. Mr. Laing thinks that both climate and soil are so much against India, that its average produce per acre will never approach that of America. But Mr. A. N. Shaw, collector of Dharwar, has expressed an opinion that while Mr. Laing's facts may hold good of indigenous cotton, there are few parts of India where American cotton will not grow as luxuriantly as in Alabama, the best cotton-field in America.

Mr. Talboys Wheeler, who wrote the *Cotton Handbook* for the Madras Presidency, drew the following four general conclusions, viz. :—

1st. American cotton can be grown, but the profit is questionable.

2d. Indian cotton may be improved, but only to a degree.

3d. American cotton must always command a higher price than Indian.

4th. The demand for Indian cotton must always depend on the supply of American.

But a superior cotton can undoubtedly be raised in the Karnatic at a cost not exceeding the production of the common native fibre. The tenure of land in the Madras Presidency leaves the ryot free to grow what crop he pleases; there is no export duty or special tax on cotton, and the assessment is nowhere heavy. The exports of cotton from the Madras Presidency have increased of late years; and if cotton be still not grown in the quantity or of the quality desired, the cause must be that some other crop is more remunerative to the ryot. A steady market at a remunerative price is the great want, and this the mercantile community alone can supply. There is grown in India a vast supply of cotton, and it is capable of increase by extended cultivation consequent on increased demand. A large portion of the existing supply is absorbed by the local manufacturers, but is capable of diversion if increased prices are offered by exporters. The diversion to other markets may be immediate; but an increase requires the lapse of at least one season after the demand arises, and some prospect of a continuance of that demand. Every rise in price of Indian cotton in England, however small, if likely to be permanent, exercises an immediate effect on the export of cotton from India to England. The quality is capable of great improvement, but by a more tedious process. The American cotton plant

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cannot withstand so much drought as the Indian. The ordinary native cotton-cleaning machine, for freeing the cotton fibre from the seeds, has not yet been equalled by all the mechanical skill of Europe.

Native Indian cotton is a small-podded, small-seeded, short-stapled variety; but in picking the seed, in carefully gathering and ginning, it may be much improved.

Indian cotton is somewhat difficult to spin, from its often breaking, and requiring more turns of the spindle, and from its shortness of fibre, than that of America. But the yarn made from a

pound of East Indian cotton, which costs 3½d. sterling, will sell for 7d., while from the American, which costs 4½d. the pound, the yarn sells for 7½d.

Imports into Great Britain.

1877,	12,112,819	owt.	value	£35,489,197
1878,	11,978,288	"	"	33,524,362
1879,	13,171,043	"	"	36,278,660
1880,	14,547,283	"	"	42,765,183

In the four years 1877 to 1880, 75 per cent. of the quantity imported was received from the United States, 8 per cent. from British India, and an equal quantity from Egypt.

Number of Acres under Cultivation in British India.

	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	Average yield of Cleaned Cotton per acre.
Madras,	1,577,363	1,645,389	926,115	1,165,736	1,248,322	40 lbs.
Bombay and Sind,	2,343,622	2,562,254	1,418,050	1,861,553	1,798,530	51 "
Bombay Native States,	1,885,974	1,954,353	1,805,187	1,001,753	1,183,604	...
Bengal,	142,388	173,788	162,245	...	...	...
Assam,	37,730	35,352	38,342	39,627	40,015	...
N.W. Provinces,	1,086,691	1,056,173	1,185,522	718,484	1,316,199	48 "
Oudh,	39,274	22,830	53,016	17,151	42,206	37 "
Panjab,	711,312	698,393	686,716	679,836	803,480	73 ?
Central Provinces,	805,296	756,823	802,437	837,083	724,306	32 "
Berar,	1,956,641	2,103,424	2,024,806	2,078,272	2,207,889	53 "
Hyderabad, Dekhan,	941,388	804,496	527,127	622,959	758,700	57 "
Mysore,	36,845	21,864	4,411	14,411	21,088	34 "
British Burma,	17,311	13,645	17,020	18,765	19,496	...
Total,	11,581,835	11,848,769	9,650,994	9,055,630	10,163,835	Av. 47 lbs.

The yields per acre of cleaned cotton in the years 1874-75 to 1878-79, ranged as under:—

Madras,	36 to 49 lbs.	Oudh,	17 to 51 lbs.
Bombay and Sind,	48 ,, 55½ ,,	Central Prov.,	22 ,, 43 ,,
„ Nat. St.,	48 ,, 55½ ,,	Berar,	40 ,, 71 ,,
N.W. Prov.,	29 ,, 56 ,,	Hyderabad,	39 ,, 51 ,,
		Mysore,	17 ,, 61 ,,

The value of the raw cotton exported from India has been—

1877-78,	Rs. 9,38,35,340	1880-81,	Rs. 13,24,17,341
1878-79,	7,91,30,458	1881-82,	14,93,59,595
1879-80,	11,14,54,528		

The largest consumption of cotton-wool is in the tropical countries. Americans consume 11½ pounds per head; and it has been calculated that the British Indian people consume 10 pounds per head, but Great Britain only 4½ pounds per head.

In America, for the cultivation of cotton, the ground is well ploughed, and cast into ridges about 10 inches in height, and from 5 to 6 or 7 feet apart, according to the richness of the soil or the kind of cotton to be cultivated. In poorer soils the ridges are narrower, so that the plants, which do not grow so large, may yet be able to cover the ground. The ridges allow superfluous moisture to be carried off by the water furrow, which in low situations is made into a trench. The soil is allowed to settle for a few days before sowing, as the young plants take root more vigorously than when they spring up in freshly ploughed and loose earth. Sometimes the ground is manured by running a deep furrow early in the spring between the old rows of cotton stalks, which are beaten down into it by women and children, who follow the ploughman; or well-rotted cotton seed is added as manure, and well covered up by forming a slight ridge over it. When the ground is quite prepared, a one-hole drill makes a slight furrow, from 1½ to 2 inches deep, along the centre of the ridge. The sower

follows, and drops in the seeds pretty thickly. These are immediately covered by a light harrow, which also smooths the ridge. Sometimes five or six seeds are dropped into holes, which are made at intervals of about 15 inches on the top of the ridge. In favourable weather the plants make their appearance in five or six days, and are thinned out as soon as they put forth the third or fourth leaf. This operation is performed by scraping out with the hoe all the superfluous plants and weeds, leaving three or four together, with spaces of 12 or 14 inches between them. When the plants are sufficiently established, they are reduced to a single one, and care is taken to remove every particle of grass or weed. A light furrow is then run with a one-horse plough within 5 or 6 inches of the plants, turning the earth inwards towards the roots, and even drawing it around them with the hoe, in order to supply the place of that previously removed by scraping. Hoeing and ploughing are frequently repeated, so as to keep the ground free from weeds; and this is considered essential towards obtaining a good crop. The above processes, besides loosening the soil and keeping it clean, must assist in drying it, at the same time that they prevent much lateral extension of the roots. Lopping or pinching off an inch or two of the top of the plant is not always necessary, but is useful when there is a tendency to the production of wood and leaves, to the detriment of flowers and buds.

In S. India the land should be well ploughed two or three times, and the deeper the better. All the weeds should be collected into heaps on the ploughed land and burnt, as the ashes make the best manure for cotton, and burning the soil improves its quality. Salt and lime are also good additions to a soil, as cotton requires chiefly alkalies and silicates for its nourishment. Animal

and vegetable manures are injurious, as they breed insects, which destroy the roots, leaves, and young pods of the cotton. After the land has been well and deeply ploughed, it should be left for three or four days to get well aired; it may again be ploughed into long ridges four to five feet apart. The seed is to be planted on the tops of these ridges carefully, at the depth of an inch or two, and at the distance of five feet between each seed, for Oopum, Nadum, or religious cotton; six to seven feet apart for Bourbon, New Orleans, or Havana; ten feet apart for Sea Island, Peruvian, Egyptian, or Queensland; and fifteen feet apart for Brazil or Pernambuco cotton. Cotton seed may be sown in any month of the year, but if there is no rain, it requires to be watered about three times; it germinates about the fifth day. If sown during the monsoon, the ridges must be eight inches high, and the water must be led away from the young plants, or they rot; the seed must be sown on the top of the ridges. If the leaves begin to get pale or to shrivel up, the remedy is to dig trenches between the plants so as to let air in about the roots, but must not injure them. The uncultivated cotton plant lives for three or four years; but it becomes dwarfed, and produces smaller leaves and smaller pods each year till it dies. In clay or cotton soils the plants do not attain nearly the size, nor do they produce such fine leaves or pods, as on sandy or loose soils. The cotton plants require sun, air, and moisture, but not so much of the last as of sun, light, and air at the roots; the lighter and looser the soil, the more healthy is the plant. The best soil for cotton is a sandy soil with iron and salt; or, if far from the sea, ashes of plants or of firewood may be used as a substitute for salt. When the cotton plants have attained the height of a foot, they do not require to be much watered; once in ten days will be sufficient. Oopum or common country cotton varies from one to six feet in height, and covers from two to five feet of ground; on cotton soils it seldom grows to more than two feet in height. The Pernambuco and Brazil cottons attain a height of thirty feet on favourable loose soils, and the stem grows to ten inches in diameter. They yield crops for twelve or fourteen years, but hardly any produce the first year. They bend over in the second year, and do not afterwards stand higher than eight or nine feet.

Irrigation, in Assam, is generally unnecessary, though it may be found partially beneficial in dry and sandy soils, if judiciously applied. Irrigation is not resorted to in the Benares, Allahabad, and Jubbulpur divisions, and the feeling is against its employment. In the N.W. Provinces the cotton crop is invariably irrigated, where a want of rain is likely to prove detrimental to the plant, and the process is not supposed to be in any way injurious to the fibre.

In most parts of the Madras Presidency artificial irrigation is not carried on; this remark applies more particularly to Coimbatore, Madura, South Arcot, Bellary, Western Mysore, and Nellore. In Vizagapatnam, on the other hand, the opinion is that irrigation would prove beneficial rather than injurious in seasons when rains fail or vary in their supply.

Artificial irrigation is almost unknown in the Bombay Presidency, Berar, and British Burma.

In some parts of the Panjab, cotton is irrigated

from wells, and well water is considered better for the purpose than river or canal water. In other parts, more especially in the Jullundhur Doab, the best cotton is produced upon unirrigated lands, irrigation being very sparingly resorted to in tracts where water is abundant.

Artificial irrigation to cotton is rather the exception than the rule in most parts of India; it proves more serviceable to exotic than to indigenous kinds; and in heavy black soil cotton will seldom flourish under irrigation, even of the most careful kind, while in sandy and light red sorts it might be much benefited.

Manure.—Salt marsh mud is used for manure in various parts of the cotton-growing districts of the United States, more especially in Eddesto island, one of the largest of the South Carolina group, about 30 miles S.W. of Charleston, which yields the finest cotton in the world. As much as 40 cartloads of this mud is used to the acre. Some compost it, others put it in the cattle pens. Some dry it before hauling, and then spread upon the land; while others prefer to use it as soon as dug, spread upon the land wet, and ploughed in. It is supposed that the Sea Island qualities owe their superiority to the use of marsh mud, which is rich in alkalies and alkaline earths.

In the Panjab, the localities best suited for the growth of cotton are the submontane districts of Ambala, Hoshiarpur, Gujerat, and Peshawur. The time of sowing varies from February in the south, to the middle of June in some of the northern districts. The flowering commences according to locality, between August and December; the picking following about a month after the flowering, and continues at intervals for two months.

There the average produce per acre, after the cotton is cleaned from its seed, is a little over one maund (or 80 lbs.), the rate varying from three maunds (240 lbs.) of raw cotton in the Hoshiarpur, to 16 seers (32 lbs.) of cleaned cotton in the Kangra district.

The *Nurma-bun* cotton is cultivated in small quantities all over Hindustan, and its produce is in great request for the manufacture of the best kind of Brahmanical thread. It is a bushy plant, grows to the height of about seven feet, and lasts about six years. It is cultivated all over Oudh, usually as a mixed crop, in light soils, with arhar (*Cajanus Indica*), or with kodo (*Paspalum scrobiculatum*), and often with maize. It is sown in the month of June. It is sown broadcast with the above, and nothing is done to it till it begins to ripen the pods. The cotton is picked out of the shell, which is left on the tree. The proportion of staple produced is very small. It is generally on high lands, on which the rain water does not lie.

Agra, Rohilkhand, Meerut, and Allahabad are the great cotton-producing districts of the N.W. Provinces, and their average yield per acre is moderate. In Alighurh the sowing is in June and July, and gathering from October to end of December.

In Gorakhpur and the neighbouring districts, the indigenous sorts are called Kukti, Murwa, and Desi. The *Kukti* kind is sown in February, in calcareous soils, when the ground has been but slightly prepared; it is picked in September and October. It is an annual, and the same ground is never used in two consecutive seasons.

Murwa cotton, if carefully tended, is triennial,

or even quinquennial; it is generally grown both in silicious (bangar) or calcareous (bhat) soils, as a border round sugar-cane or vegetable plots.

The *Desi* or indigenous variety is common to all Gorakhpur and its neighbouring districts. It is sown in June, in ground but little prepared for its reception, and does not yield till the following April. It is an annual; bears pods for six weeks only, and is then cut down.

In *Bundelkhand* cotton grows to great perfection, and its produce is of a softer texture and of a whiter colour than that of the Doab.

The *mar* or *manra* black soil of the first quality is the most productive, yielding on the average 286 lbs. per acre.

The *purwa* soil of *Bundelkhand* is reddish, a mixture of sand and clay, and yields 191 lbs. per acre, 2-7ths being the proportion of cleaned cotton.

Bankar is a light-coloured, sandy, gravelly soil, which yields 143 lbs. per acre, 1-5th of the produce being cleaned cotton.

In *Bundelkhand* cotton is sown as a mixed crop in the beginning of the rains, and if the season is favourable, picking begins in the middle of September in the poorer soils, but not till the middle or end of October in the rich ones. Two ploughings and three weedings are necessary. The seed is rubbed in moist cow-dung, to serve as manure, and is sown broadcast. The cost of cultivation per acre is Rs. 9. After the removal of the fibre, the seed (*binoula*) finds a ready sale in E. Oudh at 50 or 60 seers the rupee.

Jaloun, Jhansi, and *Bundelkhand* lie to the westward of the Jumna, and have always been famed among the natives for their cotton.

Central India cotton has always been esteemed. The soil in many places is the black cotton soil. In some parts of Nagpur the field is tilled and manured with ashes and cow-dung before sowing. In pargana Boondoo, besides the common *Kapas*, there are two other sorts of cotton, called *Tureea* and *Guteh*. The former is sown in October, and picked in April and May, the field being tilled ten or twelve times before sowing. The latter is sown in July; cotton is picked two or three times in April; the trees last from three to four years, producing cotton every year, and they are 2½ yards high. This is grown by the poorest class in their own premises. The time of picking, speaking generally, is the whole of November and December, excepting in pargana Boondoo, where, as already stated above, the *Tureea* and *Guteh* or *Gujar* are picked in the months of April and May.

In *Berar*, the *Chundelea*, a very fine cotton fabric of India, so costly as to be used only in native courts, was made from *Amraoti* cotton. The chief care bestowed was on the preparation of the thread, which, when of very fine quality, sold for its weight in silver. The weavers work in a dark under-ground room, the walls of which are kept purposely damp, to prevent dust from flying about.

Mr. Terry has stated that the *Amraoti* cotton, if well prepared, is equal to any American cotton for the great bulk of the manufactures of England.

Hinginghat cotton is admittedly one of the best staples indigenous to India. It is, properly speaking, the produce of the rich *Wardha* valley, brought for sale to the *Hinginghat* market; but a good deal of the cotton known in *Bombay* as

Hinginghat is not really produced in the neighbourhood of the town, but is grown elsewhere, attracted to *Hinginghat* by the ready market there found; thus some of inferior quality goes into the market at *Hinginghat*. The best foreign cotton is that brought from *Edalabad* in the *Hyderabad* territory, where the growth of the *Pain Gang* valley is collected. This cotton is reckoned quite as good as the *Hinginghat* staple, and is eagerly sought after.

The *Bombay Presidency's* best cotton districts are the Southern *Mahratta* country, about 16° N. lat., where experimental farms were established. In *Gujerat* and *Kattyawar* districts, superior cottons have long been grown by the natives; in consequence of which, these were selected as the sites of the northern experimental farms, much favourable land for the purpose being found between the latitudes of 21° and 24° N. The causes which favour the growth of cotton, esteemed both in *India* and *England*, in the tract of country extending from *Surat* and *Ahmadabad*, or from about lat. 21° and 23°, in a broad band across *Malwa* to *Banda* and *Rajakhaira*, in about 25° and 27°, near the banks of the *Jumna*, are no doubt physical. The black cotton soil which is spread over a great portion of this tract, has undoubtedly a considerable share in producing the result; but good crops of cotton are produced in some parts where there is no black soil, as immediately on the banks of the *Jumna* and in the *Doab*.

In the *Kandesh* model farm in 1875-76, the average yield was 50 lbs. of clean cotton per acre of the *Hinginghat* variety, the maximum being 130 lbs. per acre. The average in the *Nagpur* model farm was 50·6 lbs. per acre. On unmanured land only 28 lbs. per acre. On *Syedapet* farm, the western variety yielded 353 lbs. per acre, and in the *Sind Hyderabad* collectorate the yield was 346·94 lbs. per acre of uncleaned cotton.

Cotton, wheat, and *bajra* (*Penicillaria spicata*) all ripen in *Gujerat* at the same period of the year, about the end of February, and the cotton-picking continues to the middle of April. The first picking of cotton affords the best kind, the second is the most abundant, and the third is greatly inferior to the other two, both in quantity and in quality.

In *Cuttack* and *Orissa* there are two highland or upland varieties, the one called the *Daloona*, because the plants throw out numerous branches. The second kind of upland is called *yellow*, from the colour of the flowers; the flower of the *Daloona* being white. A third variety may be called the lowland, and is known locally as the *Keda*. The upland varieties are grown more or less all over the *Gurjato* or *Hill States*, wherever a virgin forest soil exists. They are grown generally in the *Sumbulpore* district and its dependencies, throughout the *Tributary States*, and in *Dhenkanal* and *Khoordah*. A virgin forest soil is the only requisite for the successful cultivation of these varieties. The jungle is cut down, all the brushwood cleared, heaped and burnt on the spot, the stems and roots of the larger trees being left in the ground, which then receives a superficial ploughing. These clearings are called *tasla*, and the cotton grown in them *Tasla* cotton. These preparatory processes are attended to in *Sumbulpore*, *Khoordah*, and *Dhenkanal*, just before and during the first falls of rain, in the latter half of May and the first half of June, so that the plants

shoot and grow and arrive at maturity through the rainy months. Dwarf paddy, sooa, *Panicum Italicum*, Eleusine coracana, bajra, or castor-oil, are sown with the cotton seed broadcast. The edible seed-crops in the third or fourth month are gathered as they ripen, then the ground is weeded and turned about. In January and February the cotton plants yield the first picking, and a month after the castor-oil seed ripens, and its plants are plucked and removed. Dalooa cotton plants last for two or three years, and yield three pickings annually, and reach a height of 9 to 12 feet. With the yellow upland, it is not so generally the practice of sowing other crops.

The cultivation of the Keda or lowland variety of cotton is confined almost to the settled and open districts of Cuttack, Puri, and Balasore; a little is raised in Dhenkanal and Khoordah. The best soil selected for this variety is dofuslee, or double crop. It is generally a light sandy soil, handy for irrigation purposes. The seed used throughout the district for lowland cotton is procured from Khoordah and Dhenkanal, it being alleged that none other will germinate in the lowland districts. It is placed in a pot, and soaked in dung and water for a night, and then dried by exposure to the sun on the following day. It is afterwards laid on straw, contained in an earthen vessel covered over with castor-oil leaves and placed near a fire. So soon as the seed splits and shoots it is planted, and watered at intervals of two, three, and four days. November and December are the usual months for the planting. The plants are annual, and attain a height of 4 to 6 feet. The cold weather showers falling occasionally in December, January, and February, favour the plants, and when plentiful, constitute a good season. The pickings are obtained continuously in April, May, and June. In the latter month all the bolls are picked off the plants, and after exposure to the sun, open. After the month of June, the lowland cotton plants are plucked up, and the land cleared for a pulse crop.

Madras Presidency.—As early as 1790, Dr. Anderson was employed in sending Mauritius cotton seeds, as well as brown cotton seeds, imported from Malta, to different parts of the Peninsula; and Dr. Roxburgh, who left Samulcotta in the Northern Circars, and took charge of the Calcutta Botanic Garden in 1793, had already ascertained that the elevated, dry, and less fertile soil of Coromandel was better suited than that of Bengal to the Bourbon cotton. He obtained its seeds from Mr. Hughes, who had for some time been engaged in the culture of cotton in the Tinnevely district, and whose success was so considerable with Bourbon cotton, that for twenty years Hughes' Tinnevely cotton continued to be quoted in the Liverpool market as the best from India, and sold at higher prices than the American short-staple cottons, and 3d. per pound above the best Surats. The fact is important, on account of the latitude of Tinnevely being only $8\frac{1}{2}^{\circ}$, and because the success was evidently the result of skill applied to the culture. The produce, only 100 lbs. per acre, was fine in quality and much esteemed. The cottons of the Madras Presidency are more largely grown in the valley of the Kistna, and in the Bellary, Kurnool, Tinnevely, and Coimbatore districts.

At Coimbatore, the Oopum or best indigenous

cotton is raised in rotation of two years, with cumboo, *Panicum spicatum*, *Penicillaria spicata*, and cholom or *Sorghum vulgare*. The Oopum cotton is raised on black soil.

In Bellary, cotton is grown in drills along with cholom or millet; with the former, the drills are about six feet apart, and have from four to six rows of sorghum between each one of cotton; with the latter, the drills of cotton are only three feet apart, and have two rows of millet between them. When the crop of the millet is cut down, a very singular and sudden change occurs; one day nothing is seen but yellow grain, which on the next disappears, and a thick crop of green cotton plants, about half a yard high, remains. None of the fields are enclosed, but they are generally protected at the sides of the road by rows of the prickly Jamaica yellow thistle, *Argemone Mexicana*.

In Vizagapatam, about lat. 17° N., very liberal pruning is practised, and the return is much greater than in any other of the Madras districts. In sandy soils near the sea, the Oopum cotton yields the more largely.

In Mysore, large belts of land in the northern and central taluks are deemed excellent for cotton culture.

For a series of years up to 1850, Dr. Wight, an eminent botanist, was employed in experimental cotton-growing in the collectorates of Tanjore, Coimbatore, and Tinnevely, and he formed the opinion that the less yield of the cottons ripening there in January, was owing to the insufficient warmth of that season of the year.

In Ceylon, cotton is grown very generally both by the Singhalese and Tamil races, but upon no regular plan nor to any extent.

Bengal Presidency.—The indigenous cotton of Dacca has long been celebrated for its superior quality. It is cultivated along the banks of the Megna from Feringyabazar to Edilpore in Bakarganj, a distance of about forty miles, on the banks of the Brahmaputra creek (the ancient channel of the river of the same name), and along the Luckia and Banar. It presents different shades of quality, the finest of which is named Photee, and is the material of which the delicate muslins are made. It was described by Roxburgh as differing from the common herbaceous cotton plant of Bengal in several particulars, chiefly in having a longer, finer, and softer fibre. It has, however, often been doubted whether the superiority of the Dacca manufacture was dependent on the skill of the workmen or the goodness of the cotton; but, from Mr. Lamb's account, it appears to have been carefully cultivated. Probably both had some influence; and it is certain that the workmen prefer the Dacca cotton, because, as Mr. Webb long ago explained, its thread does not swell in bleaching, as is the case with the cotton grown in North-western and Central India.

In Burdwan the Wesbee or native cotton plant is sown in the month Ashar. The soil is ploughed four or five times, the seed is kept in water for three or four days, is taken out on the day before it has to be sown, and is then mixed with ashes and cow-dung, and in this state is scattered over the ground, which is then again ploughed. Some cultivators, however, put four or five seeds in

small holes at the interval of about $1\frac{1}{2}$ cubits. In the month of Magh (January—February), when the plants become $\frac{1}{2}$ cubit high, they are watered. The picking of the Wesbee cotton is commenced in the month of Cheyt, corresponding with April, and finished in June and July (Joyte). Nurma cotton is cultivated in the month of Ashar, corresponding with June. The roots of the plants are well covered with earth. No irrigation is required, as nurma cotton is a rainy season plant. Its cotton is picked in November and December.

The Garo, Tiperah, and Chittagong hills produce a large quantity of inferior cotton, called Bhoga. It is used in the manufacture of the inferior kinds of hummum, bafta, boouee, saree, jore, etc., also for making ropes and tapes, and the coarsest of all fabrics, viz. garha and guzeeh, which are commonly used for packing other cloths, and for covering dead bodies, for which purpose a large quantity of them is consumed annually both by Hindus and Mahomedans. A piece of guzeeh cloth, measuring 10 yards, could be purchased for 12 annas (eighteenpence), which is the one hundred and twenty-fifth part of the price paid for a piece of mulmul-i-khas of the same dimensions.

In *Tirkut* the cottons produced are of the kinds called Bhojra, Bhogla, and Kooktee; the two former ripen in April and May, the Kooktee ripens in September. The fabric manufactured from Kooktee cotton is not white, but of a stained white colour, white cotton being produced only from the Bhojra and Bhogla kinds.

The soil upon which the cotton plant in *Cachar* is grown, consists of a rich red clay, considerably mixed with sand, which forms the soil of the principal hills in the district, and also of the small ranges of hillocks that run through it. The cotton cultivation lies on the slopes of these hills and mountains, such lands being never inundated, although they are wonderfully retentive of moisture. The same hills and slopes became in great request for the cultivation of the tea plant, the soil being peculiarly adapted for its growth. The cotton seeds, together with others, are put in in March and April; they are planted irregularly, but never closer than from 3 or 4 feet apart. The whole cultivation is weeded three or four times during the rains. The cotton flowers in July and August; the picking commences in September, and is continued till December.

In *Burma*, the cotton grown is *Gossypium herbaceum*, and it reaches a very fair staple. The soil on which it thrives best is the alluvial deposit left by the numerous mountain streams and rivulets on their subsidence at the close of the south-west monsoon. It also grows very well on recent forest clearings, where, often, soils containing a considerable portion of peaty matter and lignite are met with, and appear very suitable for the good of the plant. It appears to thrive also in a limestone soil, which abounds in these provinces.

Cotton grows all over *China*. The Nankin variety is called Tsz-hwa. The Kiang-hwa plant grows in Central China. The cotton plant of Shan-tung and Peh-chi-li is called Peh-hwa, and Cheh-hwa is that of Che-kiang. China has ever been a largely importing country. The cotton-growing area in that country is, however,

very large. The yellow cotton from which the beautiful Nankin cloth is manufactured, is called Tze-mie-wha by the Chinese. Although the yellow variety has a more stunted habit than the other, it has no characters which constitute a distinct species. It is merely an accidental variety; and although its seeds may generally produce the same kind, they doubtless frequently yield the white variety, and *vice versa*. Hence specimens of the yellow cotton are frequently found growing amongst the white in the immediate vicinity of Shang-hai; and again, a few miles northward, in fields near the city of Pou-shan, on the banks of the Yang-tze-kiang, where the yellow cotton abounds, Mr. Fortune often gathered specimens of the white variety. Nankin cotton is chiefly cultivated in the level ground around Shang-hai, where it forms the staple summer production of the country. This district, which is part of the great plain of the Yang-tze-kiang, although flat, is yet several feet above the level of the water in the rivers and canals, and is consequently much better fitted for cotton cultivation than the plain of Ningpo, where the ground is either wet and marshy, or liable at times to be completely overflowed. The soil is a strong rich loam, capable of yielding immense crops year after year, although it receives but a small portion of manure. The manure applied to the cotton lands of the Chinese is obtained from the canals, ponds, and ditches, which intersect the country in every direction, and consists of mud which has been formed partly by the decay of long grass, reeds, and succulent water plants, and partly by the surface soil which has been washed down from the higher ground by the heavy rains. In the end of April and beginning of May, the land having been prepared in the manner just described, the cotton seeds are carried in baskets to the fields, and the sowing commences. They are generally sown broadcast, and then the labourers go over the whole surface with their feet and tread them carefully in. The cotton plant produces its flowers in succession from August to the end of October; but sometimes, when the autumn is mild, blooms are produced even up to November. As the pods are bursting every day, it is necessary to have them gathered with great regularity. When perfectly dry, the process of separating it from the seeds commences. This is done by the well-known wheel with two rollers, which when turned round draws in the cotton, and rejects the seeds. It is a simple and beautiful contrivance, and answers well the end for which it is designed.—*Reports of East India Company on Cotton*, p. 350; *Agri-Horticultural Societies of India and of Madras*; C. B. Saunders, Esq., *Commr. of Mysore*; Dr. Cleghorn, in *Rep. Brit. Association*; *Bonyng, America*; *Proceedings, Madras Govt.*; *Friend of India*; *Cal. Review*; *Indian Field*; *Royle, Fib. Plants*; *Royle, Productive Resources of India*; *Annals, Ind. Administration*; *Madras Chamber of Commerce*; *Dublin University Magazine*; *Elliot, Supplement*; *Cotton Report*, 1857; *Exhib. Jur. Rep.* 1862; *Alexander Mackay's Commerce Reports*, 1853; *Walter R. Cusell's Cotton*, 1862; *J. G. Medlicott, Cotton Handbook*, 1862; *J. T. Wheeler's Cotton Handbook*; *Dr. Short's Letters*; *Low's Sarawak*; *Markham, Peruvian Bark*; *Central Committee, Lahore*; *Carnegy*; *T. B. Lane, Esq., Collector, Tirkut*; *Smith*.

COTTON BALES.

COTTON BALES weigh—

In America, . . . 440 lbs.	In China, . . . 240 lbs.
„ Brazil, . . . 180 „	„ Bengal, . . . 300 „
„ Egypt, . . . 500 „	„ Madras, . . . 300 „
„ Turkey, . . . 350 „	„ Bombay, . . . 394 „

COTTON GATHERER.

Binahar, Pinjara, . . . HIND. | Pyhura of BUNDELKHAND.
Pykar of . . . DOAB. | Pooree of . . . DEHLL.

In India generally these receive one-tenth of the gross produce, as well as a share, sometimes equal to a fourth, of the cleaned cotton.

COTTON - GRASS, *Eriophorum cannabinum*. Its seeds are clothed at their base with a silky or cotton-like substance, with which pillows are stuffed, and wicks of candles, as well as paper, made. Its name is bhabhur and bhabhurce, and it is made into ropes by the Hindus. An old writer says, 'The wind-trees of that country bear fleeces as their fruit, surpassing those of sheep in beauty and excellence; and the Indians use cloth made from those trees.'—*Birdwood*.

COTTON MANUFACTURES. Amongst the goods which appear to have been brought to Europe from the Indian seas, in the days when Arab traders were the only medium of intercourse between the eastern and western worlds, we find mentioned cloths of silk and cotton of various colours and devices. It does not appear, however, that there existed in Europe any great demand for cotton,—the consumption of the Roman people, who were then the customers for all luxuries, being chiefly confined to cloths of silk and wool. During the trade of Europeans with India by the long sea route, the calicoes and fine muslins of that country came into general notice; and until the production of machine-made fabrics in Britain, they continued to rise in public estimation. It was deemed a great thing with the Lancashire manufacturers, when, by the aid of mechanical and artistic skill, combined with the potent agency of steam, they found themselves able to produce an article which was considered equal to that which the unlettered Hindu had manipulated in his little mud hut on the remote banks of the Ganges, and which had been produced of like excellence by their ancestors, when the 'father of history' penned his observations upon their countries. That the Hindus paid considerable attention to the details of this manufacture in the most remote ages, there remains sufficient proof on record. In the Indian work of highest antiquity, the Rig Veda, believed to have been written fifteen centuries previous to the Christian era, occurs the following passage: 'Caræ consume me, Satakratu! although thy worshipper, as a rat gnaws a weaver's threads,'—the temptation to the rat being evidently the starch employed by the spinner to impart tenacity to the thread; nor can there be any doubt that cotton was the thread alluded to. Again, in the Institutes of Menu, we find it directed as follows: 'Let the weaver who has received ten palas of cotton thread, give them back increased to eleven by the rice-water (starch) and the like used in weaving; he who does otherwise shall pay a fine of twelve panas.' In recent times the cotton fabrics of India formed a considerable item in the exports from the East, during the early days of British Indian commerce; the delicacy of their fabric, the elegance of their design, and the brilliancy of their colours, rendered them as attractive to the better classes of

COTTON MANUFACTURES.

consumers in Great Britain, as are, in the present day, the shawls of Kashmir or the silks of Lyons. So much superior, indeed, were the productions of the Indian spinning-wheel and handloom, to those turned out by the manufacturers of Lancashire in the middle of the 18th century, that not only were Indian calicoes and Indian prints preferred to the British-made articles, but the Manchester and Blackburn weavers actually imported Indian yarns in large quantities for employment in their factories. It was about the year 1771-72 that the Blackburn weavers, taking advantage of the discoveries and improvements of Arkwright, Hargreaves, and others, found themselves in a position to produce plain cotton goods, which, if they did not quite equal the fabrics of the East, at any rate found their way very rapidly into general consumption in Europe. The invention of the mule jenny in 1779 was the commencement of a new era in the history of the cotton manufacture of Great Britain; and when, six years later, Arkwright's machines were thrown open to the public, a revolution was effected in the production of all kinds of yarns. Great Britain found herself able not only to supply all her own wants with cotton goods of every variety of quality, but also to carry the produce of her looms 10,000 miles across the sea, and, placing them at the doors of the Indian consumer, undersell some kinds of the goods made by his own hands from cotton grown in his own garden. Nor is it only in the heavier goods that the West are able to beat out of their own markets the weaver of the East. There have been masters in their craft who produced fabrics more exquisitely delicate and light in texture than those beautiful muslins of Dacca, so long and justly celebrated with a world-wide fame. Although in some particulars these latter fabrics claim a certain degree of superiority, many of the Hindus prefer much of their own woven goods to those of Manchester and Glasgow; and the cotton manufactures of British India have been steadily advancing in the out-turn of twist and yarn and piece-goods. It is generally believed that Manchester will fail to contend with the Indian mills in respect to the precise class of goods they are in the habit of turning out. The cotton mills of Bombay have made, since the date of their first starting in 1854, very rapid progress.

In the 25 years between 1857-58 and 1881-82, the value of all the cotton goods imported into British India from foreign countries rose from £5,726,618 to £20,772,098. Since 1868-69 the values of the twist and yarn and of the piece-goods have but little increased. In 1881-82 the twist and yarn was of value £32,220,648. British India has been latterly holding its own. The exports have consisted of cotton goods, including twist and yarn, and have risen from £637,651 in 1850-51, to £1,906,868 in 1881-82.

The yearly increasing exports from Europe misled exporters, for Europe had seldom been able to compete either with the delicate hand-made fibres which the Hindus and Mahomedans have been producing, or with the strong, coarse fabrics which the village weavers produce during the slack time of their agricultural pursuits. In the middle of the 19th century, British India also began to use machinery. In 1880 there were 58 cotton mills at work in British India, with 1,471,730

spindles, mules, and throstles, and 13,283 looms, turning out twist and yarn and cotton cloths, with a nominal capital of four millions sterling.

With their rude implements the Hindus of Dacca formerly manufactured muslins, 'to which,' as Dr. Ure observed, 'European ingenuity can afford no parallel,—such, indeed, as has led a competent judge to say it is beyond his conception how this yarn, greatly finer than the highest number made in England, can be spun by the distaff and spindle, or woven by any machinery' (Ure's *Cotton Manufacture of Great Britain*, i. p. 54). The jawbone of the boalee fish (*Silurus boalis*), the teeth of which being fine, re-curved, and closely set, serves as a fine comb in removing minute particles of earthy and vegetable matter from the cotton. The Hindu spinner, with that inexhaustible patience which characterizes the race, sits down to the laborious task of cleaning with this instrument the fibres of each seed of cotton. Having accomplished this, she then separates the wool from the seeds by means of a small iron roller (dullun kathee), which is worked with the hands backward and forward, on a small quantity of the cotton seeds placed upon a flat board. The cotton is next bowed or teased with a small bow of bamboo, strung with a double row of catgut, muga silk, or the fibres of the plantain tree twisted together; and, having been reduced by this instrument to a state of light downy fleece, it is made up into a small cylindrical roll (*puni*), which is held in the hand during the process of spinning. The spinning apparatus is contained in a small basket or tray, not unlike the catheteræ of the ancient Greeks. It consists of a delicate iron spindle (*tukooa*), having a small ball of clay attached to it, in order to give it sufficient weight in turning; and of a piece of hard shell imbedded in a little clay, on which the point of the spindle revolves during the process of spinning. With this instrument the Hindu women almost rival *Arachne's* fabled skill in spinning. The thread which they make with it is exquisitely fine; and doubtless it is to their delicate organization and the sensibility with which they are endowed by nature, that their inimitable skill in their art is to be ascribed. The finest thread is spun early in the morning, before the rising sun dissipates the dew on the grass, for such is the tenuity of its fibre, that it would break if an attempt were made to manufacture it during a drier and warmer portion of the day. The cohesive property of the filaments of cotton is impaired by high temperature accompanied with dryness of the air, and hence, when there is no dew on the ground in the morning to indicate the presence of moisture in the atmosphere, the spinners impart the requisite degree of humidity to the cotton, by making the thread over a shallow vessel of water. A specimen which Dr. Taylor examined at Dacca in 1846 measured 1349 yards, and weighed only 22 grains, which is in the proportion of upwards of 250 miles to a pound weight of staple. During the process of preparing the thread, and before it is warped, it is steeped for a couple of days in fine charcoal powder, soot, or lampblack, mixed with water, and, after being well rinsed in clear water, wrung out, and dried in the shade, it is rubbed with a sizing made of parched rice (the husk of which has been removed by heated sand), fine lime, and water. The loom is light and portable;

its cloth and yarn beams, batten, temple, and shuttle are the appurtenances requisite for weaving.

Dacca was the seat of a manufacture of muslins known by its name, and spoken of by the ancients as 'woven webs of air.' The principal varieties of plain muslins manufactured at Dacca were *Mulmul-i-Khas*, *Ab-rawan*, *Shab-nam*, *Khasa*, *Jhuna*, *Sircar Ali*, *Tanzeb*, *Alabullee*, *Nyan-zook*, *Baddan Khas*, *Turandam*, *Sarbutee*, and *Sarband*,—names which either denote fineness, beauty, or transparency of texture, or refer to the origin of the manufacture of the fabrics, or the uses to which they are applied as articles of dress. The finest of all was the *Mulmul-i-Khas* (literally, muslin made for the special use of a prince or great personage). It was woven in half-pieces, measuring 10 yards in length and 1 yard in breadth, having 1900 threads in the warp, and weighing 10 siccas (about 3½ ounces *avoirdupois*). The finest half-piece seen weighed 9 siccas, priced 100 rupees. Some of the other muslins were also beautiful productions of the loom, as *Ab-rawan*, compared by the natives from its clear pellucid texture to running water. *Shab-nam*, so named from its resemblance, when it is wetted and spread upon the bleaching field, to the evening dew on the grass. *Jhuna*, a light transparent net-like fabric, made for natives of rank and wealth, worn by the inmates of zenanas and dancers, and apparently the cloth referred to in the classics under the figurative names of *Tela aronarum*, *Ventus textilis*. All these muslins were made in full pieces of 20 yards in length by 1 in breadth, but varying considerably in the number of threads in the warp, and consequently in their weight. Of figured fabrics, as striped *Dooria*, chequered *Charkhance*, and flowered *Jamdanee*, there exists a considerable variety, both in regard to quality and pattern. The flowered muslin was formerly in great demand both in India and Europe, and was the most expensive manufacture of the Dacca Urung. There was a monopoly of the finer fabrics for the court of Delhi; those made for the emperor *Aurangzeb* cost 250 rupees per piece. This muslin is now seldom manufactured of a quality of higher value than 80 rupees per piece.

For the masses of the people, the British manufacturer sends to India the plain and striped *Dooria*, *Mulmul*, *Aghabani*, and other figured fabrics, which have established themselves there, and which, both from their good quality and moderate prices, are acceptable to the numerous classes who make use of them. Some of the chintzes of *Masulipatam* and of the south of India are as beautiful in design as they are chaste and elegant in colour.

Printed cloths are worn occasionally, as in *Berar* and *Bundelkhand*, for sarees; and the ends and borders have peculiar local patterns. There is also a class of prints on coarse cloth, used for the skirts or petticoats of women of some of the poorer classes in Upper India; but the greatest need of printed cloths is for the kind of bedcover called *palempore* (*palangposh*), or single quilts.

In the costlier cloths woven in India, the borders and ends are entirely of gold thread and silk, the former predominating. Many of the saree or women's cloths, made at *Benares*, *Pytun*, and *Burhanpur*, in *Gujerat*, at *Narrainpet* and *Dhanwarum* in the *Hyderabad* territory, at *Yeokla* in

Kandesh, and in other localities, have gold thread in broad and narrow stripes alternating with silk or muslin. Gold flowers, checks, or zigzag patterns are used, the colours of the grounds being green, black, violet, crimson, purple, and grey; and in silk, black shot with crimson or yellow, crimson with green, blue, or white, yellow with deep crimson and blue, all producing rich, harmonious, and even gorgeous effects, but without the least appearance of or approach to glaring colour, or offence to the most critical taste. They are colours and effects which suit the dark or fair complexions of the people of the country; for an Indian lady who can afford to be choice in the selection of her wardrobe, is as particular as to what will suit her especial colour—dark or comparatively fair—as any lady of England or France. Another exquisitely beautiful article of Indian costume for men and women is the *do-patta* or scarf, worn more frequently by Mahomedan women than Hindu, and by the latter only when they have adopted the Mahomedan *lunga* or petticoat; but invariably by men in dress costume. By women this is generally passed once round the waist over the petticoat or trousers, thence across the bosom and over the left shoulder and head; by men, across the chest only.

The *do-pattas*, especially those of Benares, are perhaps the most exquisitely beautiful of all the ornamental fabrics of India; and it is quite impossible to describe the effects of gold and silver thread, of the most delicate and ductile description imaginable, woven in broad, rich borders, and profusion of gold and silver flowers, or the elegance and intricacy of most of the arabesque patterns of the ribbon borders or broad stripes. How such articles are woven at all, and how they are woven with their exquisite finish and strength, fine as their quality is, in the rude handlooms of the country, it is hard to understand. All these fabrics are of the most delicate and delightful colour,—the creamy white, and shades of pink, yellow, green, mauve, violet, and blue, are clear yet subdued, and always accord with the thread used, and the style of ornamentation, whether in gold or silver, or both combined. Many are of more decided colours—black, scarlet, and crimson, chocolate, dark green, and madder; but whatever the colour may be, the ornamentation is chaste and suitable. For the most part, the fabrics of Benares are not intended for ordinary washing; but the dyers and scourers of India have a process by which the former colour can be discharged from the fabric, and it can then be re-dyed. The gold or silver work is also carefully pressed and ironed, and the piece is restored, if not to its original beauty, at least to a very wearable condition. The *do-pattas* of Pytun, and indeed most others except Benares, are of a stronger fabric. Many of them are woven in fast colours, and the gold thread—silver is rarely used in them—is more substantial than that of Benares. On this account they are preferred in Central India and the Dekhan,—not only because they are ordinarily more durable, but because they bear washing or cleaning better. In point of delicate beauty, however, if not of richness, they are not comparable with the fabrics of Benares.

Scarfs are in use by every one,—plain muslins, or muslins with figured fields and borders without colour, plain fields of muslin with narrow edging of

coloured silk or cotton (avoiding gold thread), and narrow ends. Such articles, called *sehla* in India, are in everyday use among millions of Hindus and Mahomedans, men and women. They are always open-textured muslins, and the quality ranges from very ordinary yarn to that of the finest Dacca fibres. Comparatively few native women of any class or degree wear white; if they do wear it, the dress has broad borders and ends. But what all classes wear are coloured cloths,—black, red, blue, occasionally orange and green, violet, and grey. All through Western, Central, and Southern India, sarees are striped and checked in an infinite variety of patterns. Narrainpet, Dhanwar, and Muktl, in the Nizam's territories; Gudduk and Bettigerry in Dharwar; Kolhapur, Nasik, Yeokla, and many other manufacturing towns in the Dekhan; Arnee in the south, and elsewhere, send out articles of excellent texture, with beautifully arranged colours and patterns, both in stripes and checks. The costly and superb fabrics of cloths of gold and silver (*kimkhab*), and the classes of washing satins (*mushroo* and *hemroo*), even if European skill could imitate them by the handloom, it would be impossible to obtain the gold and silver thread unless they were imported from India. The native mode of making this thread is known, but the result achieved by the Indian workman is simply the effect of skilful and delicate manipulation. The gold and silver cloths (*kimkhab*) are used for state dresses and trousers, the latter by men and women; and ladies of rank usually possess petticoats or skirts of these gorgeous fabrics. *Mushroo* and *hemroo* are not used for tunics, but for men's and women's trousers, and women's skirts; as also for covering bedding and pillows. They are very strong and durable fabrics, wash well, and preserve their colour, however long worn or roughly used; but they can hardly be compared with English satins, which, however, if more delicate in colour and texture, are unfitted for the purposes to which the Indian fabrics are applied. For example, a *labada* or dressing-gown, made of scarlet *mushroo* in 1842, has been washed over and over again, and subjected to all kinds of rough usage, yet the satin is still unfrayed, and the colour and gloss as bright as ever. Many of the borders of *loongees*, *dhotees*, and sarees are like plain silk ribbons, in some instances corded or ribbed, in others flat.

In Europe, it has been usual to name particular fabrics after the place of their manufacture, and this practice was extended to eastern products, as calico from Calicut, gauze from Gaza, muslin from Mosul, chintz from the Hindi *chinte*, spotted. In British India, however, the people name their woven fabrics from the form of their construction, their appearance, or the use to which they are applied. The cotton goods sent from Bombay to the Paris Exhibition of 1855, comprised *bafta*, *boonce*, *carpets*, *chandni*, *choli*, *dastarkhan*, *dhoti*, *ek-patta*, *do-patta*, *dungari*, *khadi*, *lunges*, *peshgir*, *phatka*, *pagga*, *quilts*, *razai*, *sailcloth*, *saree*, *soosi*, *turband*, *tablecloth*, *table napkins*, and *towels*.

Omitting the second-rate kinds of cloth, which constitute the great bulk of the Dacca cotton manufacture, a class worthy of attention is that of fabrics of a mixed texture of cotton and silk. They are designated by various names, as *now-büttee*, *kutan*, *roomce* *apjoola*, and *lucka*; and, when embroidered with the needle, as many of

them frequently are, they are called kusheeda. The silk used in their manufacture is the indigenous muga silk of Assam and Sylhet; but the cotton thread employed is now almost entirely English yarn, of qualities varying from Nos. 30 to 80. These cloths are made exclusively for the Jedda and Bussora market; and a considerable stock is yearly exported in the Arab vessels that trade between Calcutta and these ports. Pilgrims, too, from the vicinity of Dacca not unfrequently take an investment of them, which they dispose of at the great annual fair held at Meena, near Mecca. They are used by the Arabs chiefly for turbands and gowns. The golden colour of the muga silk gives to some of these a rich lustrous appearance. Pieces made of native-spun cotton thread and of the best kind of muga silk, would be admired in England.

In Ganjam is fabricated a cotton cloth, each side of a different colour. This effect is produced not by dyeing the cloth after it is woven, but by a dexterous manner of throwing the wool across the warp on either side. Madapollam and Ingeram used to be famous for cotton cloths, but since the abolition of the Company's trade, the finer panjams have not been made. Palampores, as bed coverings, of the former place deserve attention. Very fine muslins are made at Oopada, north of Cocanada, and handsome turbans, with gold thread interwoven; but all these things are far surpassed by the Bengal fabrics. The Chicacole muslins are, however, prized by European ladies. Cotton cloths from Nellore consist of manufactured articles which find a ready sale in the markets of this Presidency.—*Madras Erh. Jur. Rep.* 1855, 1857; *Dr. Taylor of Dacca, Reports of Great Ex. of 1851*; *Cal. Cat. Ex. of 1862*; *Juries' Report, Ex. of 1862*; *Royle, Arts of Ind.*; *Royle, Prod. Res. of India*; *Bombay Times*.

COTTON SEED is the Binour, Binoula of Hindustan. It is chiefly used in India for feeding cattle, and also sometimes as manure for cotton plants. In the year 1878, 175,000 tons were imported into Great Britain, and sold there at from £7, 17s. 6d. to £9, 10s. Cotton seed oil is expressed from cotton seeds. It is used for burning in lamps, and is also considered to have, in a peculiar manner, the virtue, when externally applied, of clearing the skin of spots and freckles. It is a drying oil, and therefore unfit for lubricating. When obtained by pressure, its colour, owing to the presence of a resinous substance, is of a very dark red, and 10 to 15 per cent. is lost in bleaching it. When prepared by steaming the seeds and collecting the oil by skimming it from the surface of the water, it has a bland, light-coloured appearance.—*Faulkner*.

COTTON, SILK. The silk-cotton trees of India are the *Eriodendron aufractuosum*, *D.C.*, and the red cotton tree, *Salmalia Malabarica*, *Schott*. The seeds of *E. aufractuosum* are embedded in silky cotton. The capsules, on bursting, display a flocculent cotton-like substance, more silky than cotton, and named silk-cotton. It differs also in not spinning like cotton. Mr. Williams of Jubbulpur, however, succeeded in spinning and weaving some of it, so as to form a very good coverlet. It is used for stuffing pillows, muffs, and coverlets; for wadding, or for conversion into half stuff for papermakers. In the Trans. of the Agri-Hortic. Soc. iii. p. 274, there is a report from the Society

of Arts on two pieces of cloth made from the simul or silk-cotton tree; but from the shortness of the staple of the down, and its elasticity, it cannot be spun by ordinary cotton-spinning machinery. A silk-cotton surrounds the seeds of *Bombax ceiba*, *L.*, a South American tree, and is used for stuffing cushions and the like, but not suited to work into cloth fabrics. Another beautiful silk-cotton (West Indian) is from *Ochroma lagopus*.—*Royle, Fib. Pl.*

COTTON SOIL, or Black Cotton Soil, is the name given to the 'regar.' See Soil.

COTTON THIEF, a name applied in Ceylon to the beautiful long-tailed bird, *Tchitreia paradisi*, *Linn.*, the sultana bulbul of the Mahomedans of the Peninsula, its long white feathers in the tail streaming like cotton as it flies.

COTURNIX VULGARIS, the common quail of Europe, Asia, Africa, is chiefly migratory, and is abundant in India.

COULAM, in Southern India, is the name given by the Tamil people to the whole island of Ceylon. It is also the name of the towns which Europeans call Covelong near Sadras, on the east coast, and Quilon on the west coast, of the Peninsula.

COUNTRY, a prefix in use amongst the British to indicate a product of India. It is a translation of several vernacular words, used to express an article local and not foreign. The Tamil word Nat'h has this signification.

Country Almond Tree, *Terminalia catappa*.
Country Borage, *Coleus Amboinicus*.
Country Fig Tree, *Ficus racemosa*.
Country Galls, myrabolan.
Country Gooseberry, *Cicca disticha*.
Country Greens, *Amarantus oleraceus*.
Country Kreat, *Exacum bicolor*, chiretta.
Country Mallow, *Abutilon Indicum*.
Country Rosin, dammer.
Country Sarsaparilla, *Hemidesmus Indicus*.
Country Walnut, *Aleurites triloba*.

COURMARINE, an aromatic principle found in *Melilotus officinalis*, or common melilot, and in the tonquin bean, *Dipterix odorata*.

COURSE, a term applied by European residents in India to the places of evening promenade, probably obtained from the Corso of southern Europe.—*Elliot*.

COURT, a general of Ranjit Singh. He had previously been a lieutenant of the old Imperial French Guard.

COURT, M. H., major of the Madras Artillery, wrote an account of Palembang, 1821.

COURTALLUM, a town near Tinnevely in the Arangole pass. It is in lat. 8° 56' 20" N., long. 77° 20' E., and is 700 feet above the sea. It has waterfalls considered sacred by the Hindus.

COURTNEY, an ancient village 11 miles from Bellary, in which the Jaina religion was formerly prominent, supposed to have been suppressed by the Jangam sect.

COUSIK, a tribe of Sombansi Rajputs; their name would, however, seem to imply Brahmanical descent or connection.—*Elliot*.

COUVADE, a custom amongst several ancient and some existing tribes. According to Apollonius Rhodius, this singular custom prevailed among a people called the Tibareni, at the mouth of the Black Sea.

'In the Tibarenian land,
When some good woman bears her lord a babe,
'Tis he is swathed and groaning put to bed;
Whilst she arises, tends his baths, and serves
Nice possets for her husband in the straw.'

Diodorus Siculus mentions that in Corsica the wife was neglected, and the husband put to bed and treated as the patient.

Marco Polo, in the 13th century, seems to have observed the custom in the Chinese province of West Yun-nan amongst the aboriginal tribes of the land, the Miau-tze, who practise it to the present day. The father of the new-born child, so soon as the mother can leave her couch, gets into bed, and there receives the congratulations of acquaintances. And Marco Polo mentions that in the Zar-dandan (gold teeth) tribe on the frontiers of Burma, when a woman bore a child, she rose and went about her business, and the husband took to bed for forty days, and was fed on possets.

About the beginning of the Christian era, Strabo (iii. 4, 17) mentions that among the Iberians of the north of Spain, the women after the birth of a child tend their husbands, putting them to bed instead of going themselves. In the same locality, amongst the modern Basques in Biscay, M. Michel found the same custom prevailing a few years ago. The women, he says, rise immediately after childbirth and attend to the duties of the household, while the husband goes to bed, taking the baby with him, and thus receives his neighbours' compliments. This practice seems to have spread to France, and to have there received the name of *faire la couvade*. It has been found in Navarre and on the French side of the Pyrenees.

Amongst the Caribbees of the West Indies, the father is put to bed and fed on meagre diet, and his body punctured and tortured; and the Abipone husband of S. America is treated like a lying-in woman.

The Yerkala or Yerkal-wanlu dwell in the Telugu districts of the Madras Presidency. Those in the neighbourhood of the Dumagudian practise the Couvade. Directly the woman feels the birth-pangs, her husband puts on some of her clothes, places on his forehead the mark which women apply to their foreheads, retires to a room where there is only a very dim lamp, and lies down on the bed, covering himself up with a cloth. When the child is born, it is washed and placed on the cot beside the father. Asafetida, jagari, and other articles are then given, not to the mother, but to the father. During the days of ceremonial uncleanness, the man is treated in the manner that on such occasions other Hindus treat their women. He is not allowed to leave his bed, but has everything needful brought to him.—Mr. John Cain in *Ind. Anti.*, May 1874; *Apoll. Rhod. Arçon*, ii. p. 1012, in *Quarterly Review*, July 1868; *Müller's Chips*, ii. pp. 277-284.

COVELLIA GLOMERATA. *Miq.*

Ficus glomerata, *Willd.* | *Atteekka-gass*, . SINGH.
Common in Ceylon on the banks of rivers and up to 2000 feet.—*Thw.* p. 267.

COVELLIA OPOSITIFOLIA. *Gaspar.*

C. Dæmonum, *Miq.* | *Ficus oppositifolia*, *Willd.*
C. Assamica, " | *F. Dæmonum*, *Vahl.*
C. Dasycarpa, "

Kota-dimboola-gass, . . SINGH.

Very abundant in the warmer parts of the Ceylon island.—*Thw. Pl. Zeyl.* p. 266.

COVELONG, Coulam, or Kovilam, a seaport village 22 miles south of Madras, in lat. 12° 46' N., and long. 80° 18' E. A fort, now demolished, was erected by Anwar ud Din near the ruins of one that the Imperial E. I. Company of Ostend had

erected. In 1750 the French obtained possession of it, but in 1752 it surrendered to Captain Clive.

COVIL GRASS, or Penna stipata, during the month of June is in flower, impregnating the atmosphere with an aromatic perfume. On this grass feed innumerable flocks of horses and mares, and its flower communicates to the milk of the mares a certain aromatic quality. Out of the milk is made the Tartar koumiss, and the drinkers of koumiss at this time of the year set at defiance most of the woes that distress mankind.

COVILHAM. Pedro da Covilham and Alfonso de Payva were sent as merchants in 1494, via Genoa, Alexandria, Cairo, and the Red Sea, to Aden, where they separated, agreeing to meet again at Cairo, Payva to search for Prester John in Abyssinia, whom he heard of as reigning there over a highly-cultivated people, but he died before reaching Abyssinia. Covilham went on to India, where he made drawings of cities and harbours, especially Goa and Calcut. Thence he returned along the coast of Persia to Cape Guardafui, and continued south to Mozambique and Zofala, where he ascertained that that land joined the Cape of Good Hope. From Zofala he returned to Abyssinia, and sent his diary, charts, and drawings to Genoa by some Portuguese merchants who were trading to Memphis. On receipt of these, King Emanuel, in 1495, sent four ships under Vasco da Gama, who visited Natal and Mozambique. In 1498 he was at Calcutta, and in 1499 back at Lisbon. See Portuguese.

COW.

Vache, FR.	Gow, LETT.
Kuh, GER.	Chuo, Chuowi, OLD HIGH
Bous, Boes, GR.	GERMAN.
Gu, HIND., PERS., ZEND.	Go (Gous, pl.), SANSE.
Ngau, Gao, Gal, " " "	Coo, SCOTCH.
Vacca, IT.	Vaca, SP.

A good milch cow should have a good-looking udder, fine skin, and fine tail. The herdsmen of Indian villages take out cows daily to graze, receiving 2 to 8 annas a month. In ancient Egypt the cow was a sacred animal, as also were the bulls Apis and Mneves. At present the cow is worshipped amongst all Hindus; and the Banjara are perhaps the only race in British India who apply the cow to labour. But the Vedas do not enjoin reverence to the cow; and in the Hindu marriage ceremony, where a milk cow, Surabhi, is released on the intercession of a barber, sufficient remains to show that the sacrificial rite of killing a cow was formerly practised at marriages, for the sake of hospitality.

Two Hindu traditions seem to indicate the domestication of the cow. In Hindu mythology, the Cow of Plenty, called Kamadhenu, Surabhi, Savala, granting all desires, is said to have been produced by the Sura and Asura, at the churning of the ocean after the deluge, for the recovery or production of the Chauda-ratna or fourteen sacred things; another fabulous cow, the cow of five colours, or Panch-warna, was given by Indra to the parents of Rama. It is common for Brahmans and others to feed a cow before they take their own breakfast, ejaculating as they present their food, 'Daughter of Surabhi, framed of five elements, auspicious, pure, holy, sprung from the sun, accept this food by me; salutation unto thee!' Or if he conduct the kine to grass, 'May cows, who are mothers of the three worlds and daughters of Surabhi, and who are beneficent,

pure, and holy, accept the food given by me' (Colebrooke, *As. Res.* vii. p. 276). In marriage ceremonies the hospitable rites are conducted by letting loose a cow, at the intercession of the guest, a barber, who attends for that purpose, and exclaims, 'The cow! the cow!' upon which the guest pronounces this text, 'Release the cow from the letters of Varuna. May she subdue my foe! may she destroy the enemies of both him (the host) and me! Dismiss the cow, that she may eat the grass and drink water.' When the cow has been released, the guest thus addresses her: 'I have earnestly entreated this prudent person, saying, Kill not the innocent, harmless cow, who is mother of the Rudra, daughter of the Vasu, sister of the Aditya, is the source of ambrosia,' etc. (ibid. p. 293). In the *Hitopadesa* (p. 110), the earth is called Surabhi, and the learned translator (Wilkins) notes the same to be not usually so applied, although the earth may well be called the cow of plenty.

The cow with the female buffalo furnish most of the milk used by the people of India, and there are several breeds of cows famed for the large quantities they yield; one of these, from Aden in Arabia, is much praised.

The custom in India, of using cow-dung for smearing floors and walls, is practised by all sects as well as Hindus, as the most cool and cleanly appliance. Cow-dung is plastered over the cooking-place before the meal of a person of a high class is cooked; in camps, or on journeys, a space of 10 or 12 square feet is so purified, but is easily polluted by the approach of impure persons or things, in which vexatious case the food becomes unclean. The ashes of cow-dung, vibudi, are also of a very purifying nature; and Hindus of almost all ranks and degrees, men and women, occasionally or frequently use them, mixed sometimes with other ingredients, to mark their foreheads, necks, arms, etc. Sometimes men, especially religious mendicants, or penitents, or those having some claims to sanctity, are rubbed all over with these ashy mixtures, and present a curious sky-blue appearance. Amongst Hindus, the greatest of all purifiers is the urine of a cow. Hindu spirits of impurity abhor this sin-expelling, sanctifying liquid. Images are sprinkled with it; no man of any pretensions to piety or cleanliness would pass a cow in the act of staling without receiving the holy stream in his palm, sipping a few drops, and with his bedewed fingers marking and crossing his forehead, shoulders, and breasts.—*Moor's Pantheon*, p. 148; *Williams' Nala*, p. 136; *Kennedy on Languages*, p. 43; *Wilford; Colebrooke*, p. 276; *Coleman*, p. 293.

COW BEZOAR, and bezoars from all ruminating animals, always find a ready market in China, where Chinese doctors lay it up as a rare medicine. They are not unfrequently deceived by an artificial preparation of pipeclay and ox-gall, mixed with a little hair.—*Williams' Middle Kingdom*, ii. p. 406. See Bezoar; Calculus.

COWDEE, seeds of *Aristida setacea*, a wild grass, also of *Exacum bicolor*, and of the wild grass *Kusal*.

COW-DUNG BRATTIES. ANGLO-TAM.

Bouse,	AR.	Chapre; Ohot; Doja,	HIND.
Balla; Upla; Gobar,	HIND.	Arni kanda,	"
Rana-gosa; Thepri,	"	Gomayam,	"
Bau-gautha,	"	Peda; Pidda-cal,	"
Bau-kanda,	"	Bratti; Shani,	TAM.

With water, cow-dung forms a useful wash for walls and floors, and it enters into the composition of the farriers' fomentations; it hides bad joinery. But its chief use is in forming bratties, or dried cow-dung cakes for fuel. The ground cropped by cattle, and which supplies straw, ought to receive it back before it is reduced to ashes; till this be done, lands must be unduly exhausted. Cow-dung mixed with paddy husk and earth is a fuel much used in Southern India for burning bricks and chunam, also for heating iron tyres for tying wheels, for which purpose it answers better than any other. It is more economical than any other fuel. It has a disagreeable smoke, but when thoroughly ignited, the heat given out is very intense. The cow-dung ashes balls are Tirunar unde, TAM., and Vibudi in Telugu.

A cake of cow-dung is placed on the top of a heap of corn to ward off the evil eye, and to make the grain increase (barhé, HIND.); hence the cow-dung cake is a Barh-wan, also Chauk and Ch'hatur. A Hindi couplet ridicules the practice:

'Jag baurāhā trishna bibas bhut puj bhau len;
Barhé na barhé barhwan jin Kisan rak'h den;'

'The world is mad, and for the sake of avarice will worship devils, and will still put on the Barhwan, increase or not.'—*Rohde, MSS.*

COW-FISH, *Globocephalus Rissii*.

COW-GRASS, *Trifolium medium*.

COWHAGE, or Cow-age.

Al-kushi,	ARAB.	Atmagupta,	SANSK.
Kiwach,	BENG.	Kosam billi wail,	SINGH.
Kaunchkuri,	DUKH.	Puney kail,	TAM.
Cowage,	FR.	Pilla-dugu-kailu,	TEL.
Kulkratze,	GER.	Enuga-dola-gunda,	"
Rawe,	JAV.		

Cowhage, probably a corruption of the Arabic or Hindustani and Bengali names of one of the plants that produce it. Cowhage consists of the hairs found upon pods of different species of *Mucuna*. They are exceedingly slender, brittle, and easily detached, and the fragments readily stick into the skin, and produce an intolerable itching. Cow-itch is used medicinally as a vermifuge, by being mixed with syrup till of the consistence of honey, and given in doses of two or three teaspoonfuls. The species are found in hedges, thickets, on the banks of rivers, and about watercourses, in the E. and W. Indies, and in America within the tropics. *M. urens* and *M. pruriens* usually furnish the substance; but that from *M. monosperma*, called by the Telinga, Enooqa dola Gunda, or elephant's scratchwort, is said to exceed the others in the irritating burning property of its hairs. Dr. Roxburgh states that *M. pruriens* was one of the plants formerly used in India to poison wells; but it is less hurtful than was supposed.—*Roxb.; Eng. Cyc.* p. 177.

COWRIE.

Wuda,	ARAB.	Khar-Mahra,	PERSS.
Bey,	BENG.	Pingo,	SINGH.
Kauria,	DUK.	Buclos Zimbos,	SP.
Coris, Oauris, Bouges,	FR.	Kavadi,	TAM.
Cori, Porcellanne,	IT.	Gavalla,	TEL.
Bey,	JAV., MALAY, SANSK.		

Cowries are small, white, or yellow, glossy shells, of the genus *Cypræa*, found in abundance on the shores of the Laccadive and Maldivé islands, African coast, Zanzibar, and the Sulu

islands, etc. There are many species, but the *Cyprea moneta* pass current as coin in payment of fractional parts of a pice, in India and some parts of Africa. They are brought to India in large quantities, and are re-exported to Britain, where they are used in inlaying, in ornamenting toys, work-boxes, etc., and in the manufacture of the superior kinds of porcelain-ware. They were, during the slave trade, exported from Bombay to Africa. The cowrie seems never to have been used for money among the Indian islanders, as it has immemorially been by the Hindus. Yet the Malay and Javanese name *Beya* is Sanskrit, and is one of the synonyms which express duty, impost, or toll. In the currency of India, 4 cowries make a ganda, 20 ganda = a pan, and 5 pan = one anna. In A.D. 1740, a rupee exchanged for 2400 cowries, in 1756 for 2560 cowries, and in 1870, in Madras, as many as 5760 cowries were obtainable for one rupee. The Persian name, *Khar-mohra*, means literally a jackass' or mule's shell, because mules are ornamented in that country with trappings of shells, as a Gosain's bullock is in India. Ibn Batuta says cowries were carried from the Maldivé Islands to Bengal, to be used as coin. The Kamoos adds that a split or broken shell is suspended from the neck to avert the evil eye, and this is still done in India. Among European nations, excepting the British, these shells are known by the name Porcelli, Porcellian, Porcellanen, and Porcelaine, on account of the fancied resemblance of their shape to that of the back of a little pig; and thence arose the term for the Chinese 'porcelain,' of which the glaze or varnish is similar to that of the cowrie. Liverpool imported as under:—

1851,	1704 cwt.	1854,	90 cwt.
1852,	2793 "	1855,	311 "
1853,	1680 "		

Two commercial varieties are known, the 'live cowrie' and the 'dead cowrie.'—*Morrison's Compendious Description; Craufurd's Dictionary.*

COW-TREE, a tree belonging to the natural order *Urticaceæ*, *Brosimum utile* of Endlicher. When wounded, a milky juice is discharged in such abundance, it is said, as to render it an important object to the poor natives in whose country it grows. It is described by Humboldt as being peculiar to the Cordilleras of the coast of Caraccas, particularly from Barbula to the lake of Maracaybo, near the village of San Mateo, and in Caucagua, three days' journey east of Caraccas. In these places it bears the name of Palo de Vaca, or Arbol de Leche, and forms a fine tree, resembling the star-apple of the West Indies. The Kiriaghuna plant of Ceylon, *Gymnema lactiferum*, is described as another cow-plant, notwithstanding it belongs to the acrid and dangerous *asclepiadaceous* order.—*Eng. Cyc.; New Comm. Pl.*

COX, CAPTAIN H., was sent on an embassy to the king of Burma, and wrote his *Journal of a Residence in the Burman Empire.*

CRAB, Cancer.

Khirohung,	ARAB.	Punjpaiyeh,	PERS.
Crabe, Canore,	FR.	Oangrejo,	SP.
Krabbe Murrkopf,	GER.	Kaddal nandu,	TAN.
Kenkra,	HIND.	Samudrapu,	TEL.
Grauchio,	IT.	Nandrakia,	"
Katam; Kapiting, MALAY.			

See *Crustaceæ*.

CRAB-MUNGOOS, *Urya cancrivora*, *Hod.*

CRAB'S-EYES, seeds of *Abrus precatorius*, *L.*,

used in India by jewellers and druggists as weights, being nearly each one grain. They are strung together for necklaces, rosaries, etc.

CRACKERS, etc. Chinese fire-crackers are exported to the United States, to India, and S. America. They are made up in strings, and then in papers, and lastly in boxes, five of which are estimated to weigh one pikul. The market of Canton is chiefly supplied with fireworks from Fat-shan.—*Compendious Descrip.*

CRAMBE CORDIFOLIA, *Steven.* A plant of Persia, Caucasus, Tibet, and Himalaya, growing up to 14,000 feet. Root and foliage of this kale are eaten. *Crambe maritima*, *Linn.*, is sea-kale.

CRANE.

Gruc,	FR.	Grua, Gru,	IT.
Kranich, Krahn,	GER.	Grulla, Grua,	SP.

Cranes differ from storks in their appearance, habits, anatomy, modes of breeding, and everything except that both happen to be long-legged birds. The *Argila* or adjutant, *Leptoptilus argala*, is erroneously termed the gigantic crane. The words Crane, Geranos, and Grus, and the Hindustani names of the three common Indian species, *Saras*, *Karranch*, and *Kankarra*, all have reference to the loud trumpeting of these birds, which have a curious internal conformation resembling that of the trumpeter swans; whereas the storks are voiceless birds, having actually no vocal muscles, and can make no sound but by clattering their mandibles together, which they do pretty loudly. In Australia the term crane is applied to the egret, or white paddy-bird, as they are called in India, of the family *Ardeidæ*; while in the Malay countries the so-called paddy-bird is a finch; and the real crane of Australia, *Gr. Australasiana*, is known as the Native Companion. Some cranes and storks, four-fifths of the ducks, and the great majority of the *scolopacidæ*, breed in the north, and come to India in the cold season.

(a) *Grus antigone*, *Linn.*, *Grus torquata*, *Vieillot*, the *Saras*, a noble bird, is the largest of the whole tribe. During the breeding season it has a pure white collar below the crimson papillous naked portion of the neck, whence the name *torquatus*. It is mostly seen in pairs, a few of which breed in India in extensive jhils, but the great majority cross the Himalaya for that purpose.

(b) *Grus leucogeranus*, *Pallas*, is the beautiful large white crane of N. Asia, with black wing-primaries, and crimson naked face. A few stray pairs have been observed in the Upper Provinces of Hindustan; and Burnes figured it from the vicinity of Kabul.

(c) *Grus cinerea*, *L.*, the Kulung or European crane, common to Asia and N. Africa, visits India in great flocks, which wholly disappear in the breeding season. If we except the Manchurian species, the European crane is equal to any in the majesty of its gait and the beauty of its plumage.

(d) *Anthropoides virgo*, *L.*, the Karkarra or Demoiselle, common to Asia and N. Africa, is only known in India during the cold weather. It is the smallest, and certainly one of the most elegant, of this particularly graceful group; the only one with the head fully feathered. And it is adorned with beautiful white neck-tufts, and with lengthened and drooping tertiaries, and a

bright crimson eye. Highly gregarious, the flocks are sometimes immense. Cranes are easily tamed, and they are very ornamental birds to keep. They have a curious and peculiar habit of skipping about at times, attitudinizing or dancing, and now and then emitting their loud cries. In the wild state they do much damage to the crops from their numbers; and repair during the heat of the day to sandflats in rivers, or to other extensive waters, returning to feed morning and afternoon at regular hours. They fly in V-like flocks, like wild geese. The young, commonly two in number, follow the mother soon after exclusion, unlike those of the stork and heron tribe, with which the cranes have little in common.—Z.

CRANE-FLY. This gnat is a species of *Tipula*. Its grub is a pest of the young poppy plant, both on and under the surface of the soil.

CRANGANORE, on the Malabar coast, in lat. 10° 12' N., built on the Aycotta river, seems to have been one of the most ancient capitals of Malabar, and in some of the ancient copper deeds appears to have been called Muyiri-Kodu, the classical Muziris (?).—*Horsburgh*; *Yule, Cathay*.

CRANGONIDÆ, a family of Crustaceæ belonging to the division Decapoda Macroura. The type of the family is the common shrimp, *Crangon vulgaris*. See Crustaceæ.

CRANI. ANGLO-HIND. A Christian copyist or clerk in a public office, generally of mixed European and native descent. The term may be a mispronunciation of *Karana*, by which the Kayeth (Kayastha) or writing caste is designated in Bengal. The word *Krani* has begun of late years to be considered decidedly dyslogistic. In India, Kayeths are now never called *Khaja*. In Mahomedan countries, however, the term *Khaja* is still applied to writers and teachers. Dr. Shaw says of the Moors in Barbary, 'The Hojas suspend their inkhorns in their girdles' (p. 227); and Lady Montagu says, 'The monastery is now belonging to a Hoja, or schoolmaster.'—*Letters*, p. 176; *Elliot, Supp.*

CRANIAL DEFORMITIES. Certain tribes alter the shape of the skulls of their children, making use of, for this purpose, various mechanical contrivances, so as by pressure to bring about that outline which comes up to their peculiar ideas of beauty. Captain Cook noticed it in the island of *Ubetea*; Marsden mentions it at pp. 44, 45 of his *Hist. of Sumatra*. In the Narrative of the Voyage of Her Majesty's Ship *Rattlesnake*, Macgillivray mentions (1852) having seen some skulls of children at Cape York, altered into quite a conical shape by a constantly-applied manual compression of their mothers. Dr. Miklucho-Maclay, a countryman, when visiting, in April 1880, the islands of Torres Straits, had an opportunity of seeing, at Mabiak, this strange operation performed on the heads of several lately-born children. During the first weeks of the child's life, the mothers are accustomed to spend many hours of each day in compressing the heads of their infants in a certain direction, with the object of giving them quite a conical shape. Dr. Maclay saw the operation performed daily, and on many children, and fully convinced himself that the deformity which is perceivable in the adults is the result of this manual deformation only. It would appear that among these people we have the only well-authenticated examples of cranial deformities

brought about in this way. At Mabiak the deformation is intentional; but Dr. Maclay observed on the east side of New Guinea, numerous cases of distortion of the heads of adult females, in consequence of the practice of their carrying from childhood heavy burdens in large bags, the band of which serves as a handle, and rests across the head a little behind the coronal suture, where a permanent transverse and saddle-shaped depression of the skull occurs. In some cases this depression was not less than from three to four millimetres; and he thinks that this acquired cranial deformity has a great chance of being more or less transmitted from generation to generation by inheritance, and is therefore most worthy of being recorded.

GRAPE.

Crepe,	FR.	Sandal,	PORT.
Flohr, Kraus flohr,	GER.	Flori,	RUS.
Espumilla, Sopillo,	IT.	Cresson,	SP.

A light silk manufacture.—*M'Clulloch, Dict.*

CRATÆGUS, a genus of plants belonging to the natural order Rosaceæ, and the sub-order Pomœ. *C. glabra*, *Thunb.*, occurs in Japan. *C. crenulata*, *Roxb.*, the Indian *Pyracantha*, or white thorn, is the Gengar of the Panjab. It is a plant of Nepal, Kamaon, the east of the Panjab, and the Sutlej valley between Rampur and Sungnam at an elevation of 3000 to 7000 feet. It is shrubby, with large white flowers; wood used for staves, etc.—*Cleghorn, Panj. Rep.* p. 64; *Stewart, Panj. Plants*; *Eng. Cyc.*; *Voigt*.

CRATÆGUS CRENULATA. *Thompson.*

White thorn, ENG. | Gengar, HIND.

Grows in the Garhwal forests, where it attains a height of 20 feet, with a trunk 12 to 15 feet long and 2 to 2½ feet in girth. Timber useful, and yields crushers for sugar and oil mills.—*Thompson*; *Roxb.*

CRATÆGUS OXYACANTHA. *Linn.*

Pingyat; Ring, CHENAB.	Ring; Ringo,	KANGRA.
Ramnia,	Patakhen; Phindak, RAVI.	
Ban-sinjli,	Durana,	PUSHTU.
Sur-sinjli,	Ghwanza,	TR.-IND.

Not uncommon in various parts of the Himalaya at 5000 to 9000 feet elevation. Fruit not unpalatable.—*Stewart*.

CRATÆGUS PINNATIFIDA. *Smith.*

Shan-cha, CHIN. | Mau-cha, CHIN.

The large red fruits of this Chinese plant are strung as beads by Chinese children.—*Smith*.

CRATÆVA, a genus of plants belonging to the natural order Capparidaceæ. The *Ægle marmelos* (*Bilva* or *Mahura*), formerly considered a species of this genus, is now referred to the order Aurantiaceæ. *C. Roxburghii* and *C. nurvala* grow in India. The bark of the root of *C. gynandra*, a native of the W. Indies, is said to blister like cantharides.—*Eng. Cyc.*; *Voigt*; *O'Sh.*

CRATÆVA NURVALA. *Buch. Ham.*

<i>Cratæva tapia</i> , <i>Burm.</i>	| <i>Cratæva inermis</i> , <i>L.</i>
<i>Tapia</i> , <i>Birmi</i> ,	<i>Mavalingum</i> ,
<i>Nirvala</i> ,	<i>Maleal</i> ,
	<i>Maridu</i> ,

A small tree, 15 to 20 feet high, which grows in Malabar and Mysore.—*Voigt*.

CRATÆVA ROXBURGHII. *R. Br.*

<i>Cratæva tapia</i> , <i>Fahl.</i>	| <i>C. religiosa</i> , <i>Forst.</i>
<i>C. odora</i> , <i>Ham.</i>	| <i>C. leta</i> , <i>D. C.</i>
<i>C. Adansonii</i> , <i>D. C.</i>	| <i>Capparis trifoliata</i> , <i>Roxb.</i>

Tikto shak,	BENG.	Tapia, Varana, . .	SANSK.
Ka-dat,	BURM.	Narvala,	TAM.
Birmi-ki-jhar, . .	DUKH.	Mavilinga maram, .	"
Three-leaved caper, .	ENG.	Tella ulimara, . . .	TEL.
Garlic pear,	"	Tella ulimidi, . . .	"
Kurwan, Koomla, . .	MAHR.	Usik manu,	"
Barna,	PANJ.		

A small and very handsome tree of both the Indian Peninsulas, of the Circars, and growing in Bengal, and at Saharunpur; common on the banks of rivers, and is much planted by natives. Wood white and hard; the native dhol is often made of it, and it is used for many common purposes, and for carving models. Dr. Gibson says it is not common on the Bombay side. The fruit is hard, globose, and woody, something like that of the wood-apple; the mucilage of the fruit furnishes a cement. The juice and a decoction of its astringent bark are given in intermittent fever and typhus. The bark, macerated in water and mixed with ginger, long pepper, milk, and gingelly oil, is applied as a liniment for drying up sores. An infusion of the bark is also given in flatulency.—*Flor. And.; Voigt; Ainslie; Wight; Gibson; Useful Plants; Cat. Ex. 1862; Beddome.*

CRATOXYLON NERIIFOLIUM, Kurz, and other species, timber trees of British Burma.

CRAW-FISH. See Crustacea; Palinurus.

CRAWFURD, JOHN, F.R.S., a medical officer of the E.I. Company's army. He entered the service in 1803, and died in 1868. In 1811 he accompanied Lord Minto in his expedition to the conquest of Java, and was afterwards appointed to a native court. In 1817 returned to Britain; and in 1820 he published his History of the Indian Archipelago. He returned to India, and was sent on diplomatic missions to Siam and Cochin-China; and in 1823 he was, on the retirement of Sir Stamford Raffles, appointed Governor of Singapore. In 1826, Lord Amherst appointed him Commissioner in Pegu; and, on the restoration of peace, sent him as Envoy to the Burmese court. In 1827 he returned finally to Britain; and in 1828 he published his Embassy to Siam and Cochin-China; and in 1829 an Account of his Mission to Burma. In 1856 he published a Dictionary of the Malay Archipelago; and he took part in all the discussions of the learned at the ethnological and other societies. His publications were:—History of the Indian Archipelago, Edin. 1820, 3 vols.; Researches in India, Lond. 1817, 2 vols.; Embassy to Siam and Cochin-China; Grammar and Dictionary of the Malay Language, 2 vols. 8vo, Lond. 1851; Dictionary of the Indian Archipelago, Lond. 1857; Journal of an Embassy to the Court of Ava in the year 1827, containing a Description of Fossil Remains by Buckland, 4to, Lond. 1829; View of the Present State and Future Prospects of the Free Trade and Colonization of India, 8vo, Lond. 1829.

CREAM is the Lah and Tung of the Chinese, and Mallai of Hindustan.

CREAM OF TARTAR or bitartrate of potash, deposited in a crude state upon the bottom and sides of casks containing fermenting wine. 57,898 cwt. were imported in 1870 into Britain.

CREED. Mahomedans distinguish between a creed and a sectarian faith. Din is a creed, and Mazhab a faith. See Kalamah.

CREEK, Kyungyee, BURM.; Sherm of the Arabs.

CREMATION was common among the old German tribes, and among the ancient Britons

in druidical times; but where Christianity established itself, there cremation ceased. Amongst the Hindus it is called Bhoidagdaha, Samasan, Sumsan. A cremation site is Chihai, Chiwan, Chihani, Mar-ghat.

CRESCENT. This is used by the Mahomedan rulers of Turkey and of Hyderabad in the Dekhan as a symbol on their standards. The Adal Shahi also retained it. The crescent is worn by the Hindu god Siva and by his consort Parvati.

CRESS. American or Belleisle cress has a harsh flavour, but, being of a more robust nature than the garden cress, is easier cultivated on the plains of India. It is raised from seed; the young leaves, cut when young, are used for salads; requires plenty of water.

Garden Cress, *Lepidium sativum*.

Reshad,	ARAB.	Loot putiah (leaves), HIND.	
Cresson,	FR.	Crescione,	IT.
Kresse,	GER.	Turch-tezak,	PERS.
Chunser,	GUJ., HIND.	Berro,	SP.
Halim (the seed), .	HIND.		

The leaves are gently stimulant and diuretic; as a salad, they are wholesome and palatable, and serviceable in scorbutic diseases. Cress should be sown thick in very narrow drills, about one inch deep and a few inches apart. It requires to be well watered, and is in season all the year round. It should be cut for use when two inches high.

Water-cress is the Shwui-k'in-tsai of the Chinese.

Cress Seed.

Hurif,	ARAB., HIND.	Aliveri,	TAM.
Rohitasarashupa, .	SANSK.	Adala Vittilu, . . .	TEL.

Cress seed is of a reddish colour, and agreeable, warm taste, and is used by native practitioners as a gentle stimulant; also as a warm aperient, when bruised and mixed with lime-juice.—*Ainslie; Riddell; Jaffrey.*

CRESSA INDICA. Willde. Goon of Sind; an erect, ramous annual. Its seeds are ground, and the flour made into cakes, pure or mixed with flour.—*Roxb. ii. p. 72.*

CREX PRATENSIS, the landrail of Europe, Asia, N. Africa, is common in Afghanistan, rare in the N.W. of India.

CRICKETS in China are pitted against each other, and largely betted on. The cricket species of Acheta and Gryllotalpa are very destructive to garden and field plants. See Insects.

CRINUM ASIATICUM. Willde.

<i>a. toxicarium, Herb.</i>	<i>c. anomalum, Herb.</i>
<i>b. bracteatum, "</i>	<i>d. declinatum, "</i>
<i>C. defixum, Ker.</i>	<i>Bulbine Asiatica, var. a.</i>
Sukh dursun, . . . BENG.	Vishamandala, . . SANSK.
Nag-downa of BOMBEY.	Maha tobaleo, . . SINGH.
<i>Var. a. Poison bulb, ENG.</i>	Visha munghe elle, . TAM.
Burra kanoor, . . . H.	Visha veduraka, . . TEL.
Beluta pola-tali, MALEAL.	Lakshmi narayana, . "

There are about forty species of Crinum in S.E. Asia, many of them with several synonyms. C. Asiaticum is common in Indian gardens and groves. The flowers are fragrant and ornamental. The Bengali name means interview of ease. The root of the variety toxicarium is a good substitute for squill. The succulent leaves are about two inches broad and two or three feet long. The natives bruise and mix them with a little warm castor-oil, and consider them useful for repelling whitlows and other inflammations on the ends of the fingers and toes. The juice of the leaves is applied to

the outer ear in carache. Its juice is emetic, but very irregular in its action. From two to four drachms of recent bulls are mild emetic, and are used in Hindustan for the purpose of producing vomiting after poison has been taken, especially that of the Antiaris. The syrup is emetic for children. Dose, a dessert-spoonful, repeated as required. An infusion is a mild and certain emetic. In doses of two drachms, given every twenty minutes, this solution occasions nausea and perspiration. It does not cause griping, purging, or any other distressing symptoms.—*Genl. Med. Top.*; *O'Sh.*; *Ainslie*; *Eng. Cyc.*; *Roxb.*

CRINUM LATIFOLIUM. *Herb.*

Crinum ornatum, *Bot. Mag.* | *Amayrillus latifolia*, *Willd.*
Jovanna-pula tall, MALEAL.

A plant common in Southern India. In Tenasserim are species of crinum, which Europeans usually denominate lilies. A very large-petalled species, of which there are two varieties, is much cultivated in gardens.—*Mason*.

CRINUM SINICUM, *Roxb.*, Wan-shu-lan of the Chinese, is a beautiful plant, cultivated in India, Ceylon, Cochin-China, China, and the Moluccas.—*Smith*.

CROCODILE.

Crocodil, GER.	Buaya; Buwaya, MALAY.
Magr; Kumbhir, HINDI.	Sisan, SIND.
Cocodrillo, IT.	Ali Kimbula, SINGH.
Baya, JAV.	Cocodrilo, SP.

The species known in the E. Indies are,—

Crocodylus palustris, *Less.*, Ganges, Peninsula of India, Ceylon.

C. Siamensis, *Schneid.*, Siam, Gamboja.

C. porosus, *Schneid.*, all rivers.

C. Pondicerianus, *Gray*, Pondicherry.

Gavialis Gangeticus, *Gm.*, Ganges.

The crocodiles are the largest of the reptiles. They are present in all the larger rivers of the Peninsula, the Cauvery, Kistna, Godavery, and their feeders; also in the Indus and its feeders; in the Ganges and its feeders; in Ceylon; in the Irawadi and its feeders; and in all the rivers of the Malay and Philippine Archipelago. The Malays of the Peninsula reckon three species,—the labu or gourd, the kutak or frog, and the tambaga, or copper crocodile. That found in Sumatra and Java, Celebes, Borneo, and the Moluccas, is *C. porosus*; but there is another in the rivers of Borneo, formidable by its size and rapacity, partaking of the character of the biporcatus and the garial of the Ganges (*Crawford*, p. 10). Crocodiles are in every creek, in every river, in the Sunderbuns, varying in size from a span in length to 18 or 23 feet. They are usually seen lying on the surface of the black mud, basking in the sun; they sleep very soundly, for a steamer may be going at full speed, and making the usual splash and noise, passing within ten paces of a sleeping crocodile, without disturbing their slumbers. To a casual observer they resemble mud-covered logs of wood; and it is not until the large square glittering scales, which are of exceeding strength and beauty when closely examined, and the elevated and doubly dentilated ridge or crest that runs along either side of the tail, become visible, or are seen to glisten in the sun, that the shapeless mass is found to be a fierce, carnivorous, and dangerous animal. The Gangetic garial is not seen in the Sunderbuns; it appears to love the sweet and, comparatively speaking, quieter waters

of the upper rivers of India and their clean sandbanks, where they may be seen lying with their mouths wide open, but for what purpose it is difficult to divine, unless it is to get rid of numerous small red filamentous worms that cluster about their fauces. The lower jaw being prolonged backward beyond the skull, causes the upper jaw to appear moveable, which it only is when accompanied by the whole of the skull. A small brown bird has been seen to alight upon the tongue of an open-mouthed crocodile, and pick the worms from the throat as it lay upon a sandbank in the Ganges. It is generally believed that the snubbed nose crocodile always remains in fresh water; but such is not the case, as they are found all along the Chittagong and Arakan coasts,—never far from the shore, it is true, but still in *bona fide* salt water, where they are as dangerous as sharks. In the rivers of the delta of the Ganges, where they flow through the cultivated portions of the country, stakes are driven into the bed of the river at the watering places or ghats opposite to the villages, where the inhabitants may bathe in security, and draw water for domestic purposes; but even this precaution is not always sufficient to ward off the attacks of the fiercer crocodiles. The crocodile finds no difficulty, when pinched by hunger, in turning the flank of the stakes, and taking up his post within the enclosure, where he silently awaits his prey. A surveyor on the banks of the Gornaeo was witness to a shocking occurrence in connection with these enclosures. A young Hindu girl about 14 years old came to fill a pitcher with water, and had hardly put her feet into the water, when a crocodile, which had been lying in wait inside the enclosure, rushed at the poor girl, seized her in its formidable jaws, scrambled up the banks of the river, holding the shrieking, struggling girl well up in the air by the middle of her body, and plunged heavily into the river outside of the stakes. A smothered scream, a ripple upon the water, a few bubbles, and the frightful scene was closed. A more daring attack by a Sunderbun crocodile than even the above, occurred at Hoolna. A gang of ironed convicts were being inspected by the magistrate prior to their being sent off to another and a more distant jail. The men, numbering with their guards about fifty, were drawn up in line on the raised embankment or levee of the river; the examination was proceeding, when a crocodile rushed up the bank, seized a manacled prisoner by the legs, dragged him from the ranks, and in a moment, and before any assistance could possibly be rendered, plunged into the river and disappeared. The Peer-puker at Pundooa, in Sind, is a large tank, forty feet deep and 500 years old. The most remarkable tenant of this tank was a tame crocodile, called Fattch Khan, which answered the call of a fakir living upon the embankments. On summons, the monster would show itself upon the surface, and keep floating for several minutes. Captain von Orlich saw thirty crocodiles in a tank near Kurachee, which at the call of the fakir instantly crept out of the water, and, like so many dogs, lay in a semicircle at the feet of their master. In Colonel Tod's time there were two crocodiles familiar to the inhabitants of Udaipur, who came for food when called. He often exasperated them by throwing an inflated bladder, which the mon-

sters greedily received, only to dive away in angry disappointment. On one of these a Rajput chief affirmed he had ventured to swim. Portions of crocodiles have been discovered fossil in the Siwalik Hills, and in Burma. In India the crocodiles are often called alligators; but the alligator belongs to tropical and Southern America, where they are styled also cayman, jacar.

In Egypt the crocodile was sacred to Typhon and to the god of Papremis.

Herodotus (ii. p. 69), after describing the honours paid to the sacred crocodile by the Egyptians, adds: 'But the people who live round about Elephantine even eat them; they don't think them sacred.' In Siam the flesh of the crocodile is sold for food in the markets and bazars. The Singhalese believe that the crocodile can only move swiftly on sand or smooth clay, its feet being too tender to tread firmly on hard or stony ground. In the dry season there, when the watercourses begin to fail and the tanks become exhausted, the marsh-crocodiles have occasionally been encountered in the jungle, wandering in search of water. During a severe drought in 1844, they deserted a tank near Kornegalle, and traversed the town during the night, on their way to another reservoir in the suburb; two or three fell into the wells, others, in their trepidation, laid eggs in the streets, and some were found entangled in garden fences and killed. Generally, however, during extreme drought, they bury themselves in the mud, and remain in a state of torpor till released by the recurrence of rains. At Arne-twoe, in the eastern province of Ceylon, whilst riding across the parched bed of the tank, Sir J. E. Tennant was shown a recess, still bearing the form and impress of a crocodile, out of which a crocodile had been seen to emerge the day before. They are said to eat only living creatures, but the dead bodies in the Ganges are also said to be eaten by them. A curious incident occurred in Ceylon some years ago on the Maguruganga stream, which flows through the Pasdun Corle to join the Bentotte river. A man was fishing seated on the branch of a tree that overhung the water, and, to shelter himself from the drizzling rain, he covered his head and shoulders with a bag, folded into a shape common with the natives. While in this attitude, a leopard sprang upon him from the jungle, but, missing its aim, seized the bag and not the man, and fell with it into the river. Here a crocodile, which had been eyeing the angler in despair, seized the leopard as it fell, and sank with it to the bottom.

The garial of the Ganges is supposed to be the largest of the living saurians. The measurement of the largest mentioned by Messrs. Dumeril and Bibron is given at 17 feet 8 inches. The garial abounds in all the great rivers of Northern India. It is found in the Indus, from its delta northwards to near Attock, and up the Panjab rivers for a considerable distance, where it is most abundant.

Major Court mentions that as canoes were paddled along the Moosee river in Palembang, he saw, on two occasions, crocodiles raise their heads out of the water near the boat's side, and attempt to seize one of the paddlers. The boatmen escaped their grasp by moving away. During the time he was at Palembang, seventeen paddlers were carried away by crocodiles. Two

gentlemen coming in a small boat up the river to pay him a visit, had provided themselves with a basket of provisions for their journey. On their way, a crocodile raised its head from the water; the paddlers shrieked, and fortunately escaped, but the basket of provisions became the prey to its voracity.—*Letter from Gooneratne Moodelliar, Interpreter of the Supreme Court, 10th January 1861; Cal. Rev.; Jo. B. A. S.; Low's Surawak, p. 83; Tennant's Ceylon, p. 288; Court's Palembang; Adams.*

CROCODILE ROCK, a dangerous rock 16 miles due east of Cape Comorin.

CROCODILIDÆ, the crocodile tribe, a family of Saurians, of the order Emydosauri, which includes also the family Gharialide, comprising the largest living forms of that order of reptiles. Dumeril and other naturalists distinguished the family by the appellation of Aspidiot (shielded) saurians, while many modern zoologists have considered them as forming a particular order. See Crocodiles.

CROCUS, in the arts, a peroxide of iron, used as a polishing material.

CROCUS SATIVUS. Linn. Saffron, Crow saffron.

Zafron, AR., MALAY, PERS.	Konyer, . . . MALAY.
Than-wen, . . . BURM.	Karkum, Abir, . . . PERS.
Fan-hung-hwa, . . . CHIN.	Kasimra jamma, . . . SANKH.
Crocus of Hippocrates, GR.	Kohoon, . . . SINGH.
Zaffran, Kangan, HIND.	Koongoomapu, . . . TAM.
Keysur, Kangan mundi, . . .	Kunkuma puvoo, . . . TEL.
Konga, . . . KASHM.	

A native of Asia Minor, naturalized in England, France, and many other parts of Europe, and cultivated in Persia and in Kashmir, in one small tract at Pampur, not far from the capital. The saffron is exported both to south and north from Kashmir. Vigne says it goes mostly to Yarkand; and Cayley mentions that, in 1867, 5½ maunds reached Leh, which would be worth at Yarkand Rs. 8640. The saffron of commerce consists of the dried stigmata of the flower. These are picked out, dried on paper, either in a kiln or by the sun. If compressed into cakes, it is called cake saffron. Hay saffron is what is usually met with, and it consists of the stigmata, each about an inch and a half long, brown-red, the upper part flattened, widened, and cleft; the lower hair-like and yellowish. The odour is fragrant, taste bitter but agreeable. Saffron tinges the saliva yellow. Mr. Pereira informs us that one grain of good saffron contains the stigmata and styles of nine flowers, so that one ounce of saffron is equal to 4320 flowers. Cake saffron, as now met with, contains none of the real article, being prepared from the florets of the safflower (see *Carthamus*), made into a paste with gum-water. Dr. Honigberger mentions that *Crocus sativus* is monopolized by the Kashmirian government, and that the hakims of the Panjab use saffron in melancholy, typhus fever, enlargement of the liver, and retention of urine.—*O'Sh. p. 654; Honigb.; Royle; Stewart; Birdwood; Waring. See Saffron.*

CROCUSTHIBETANUS. *Smith. Tsang-hung-hwa, CHINESE.* A saffron of Tibet.—*Smith.*

CROMLECH is a word applied by the British to widely different structures. It is derived from the Celtic word Krom, crooked or curved, and Lech, a stone. In Brittany they are known as the Grottes aux fées, also the Roches aux fées. Its correct application is a circle of upright stones,

like the 'Hurlers' and 'Nine Maidens' in Cornwall. The cromlech of the British antiquarian is the same as the Welsh and English 'quoit,' such as Arthur's quoit or coetan (Coetne Arthor) near Criccieth, Lanvon quoit and Chun quoit and others in Cornwall, Stanton Drew quoit in Somersetshire, the Kitts koty or quoit near Maidstone, and the Coit-y-enroc in Guernsey, all of them circles of upright stones. Professor Sven Nilsson, however (on the Stone Age, p. 159), defines the English cromlech as synonymous to the French dolmen, the Scandinavian dös, and the dyas of Denmark, consisting of one large block of stone supported by some three to five stones arranged in a ring, and intended to contain one corpse only, several of these dorsar being sometimes enclosed in circles of raised stones. Following, however, the nomenclature given by the late Dr. Lukis, we cannot be far wrong in assigning the word cromlech to all elaborate megalithic structures of one or more chambers, in which category the passage graves may be included.

The dolmen (Dola, table, Moen, a stone) is, as its name implies, of different structure. The cromlechs of Jersey and the adjacent islands partake of the character of the French grottes aux fées, the fairy's grotto, as well as the Gangifter, the gallery tombs of the Swedes, the Jettestuer or chambered tumuli of the Danes, and the German Hünenbetten.

In China the chambered tumuli associated with megalithic avenues have attained their greatest development. The great tomb (the Ling or resting-place of Yung Lo of the Ming dynasty), thirty miles from Pekin, consists of an enormous mound or earth barrow covered with trees, and surrounded by a wall a mile in circumference. In the centre of the mound is a stone chamber containing the sarcophagus, in which is the corpse. This chamber or vault is approached by an arched tunnel, the entrance to which is bricked up. This entrance is approached by a paved causeway, passing through numerous arches, galleries, courts, and halls of sacrifice, and through a long avenue of colossal marble figures, sixteen pairs of wolves, kelins, lions, horses, camels, elephants, and twelve pairs of warriors, priests, and civil officers.

The tombs of the Hova race of Madagascar consist of stone vaults, made of immense slabs of stone, flat inside, forming a subterranean grotto. They also erect stone pillars similar to the menhir. The supposed aborigines of Madagascar were the Vasinba, whose tombs are small tumuli or cairns, surmounted by an upright stone pillar. The cromlech or trilithic altar, in the centre of all Druidic monuments, is supposed by Tod to be a torun or triumphal arch, sacred to the sun-god Belenus.

In 1881, Lieut. Conder saw 400 cromlechs in E. Palestine, in seven central localities. In addition to the cromlechs, several menhirs or standing stones were found, and ancient stone circles in connection with both classes of monuments. Among the sites explored were Heshbon, Elealeh, Medeba, Baal-Meon, Nebo, and Pisgah, the hot springs of Callirrhoe Rabbath Ammon; he found the place of the worship of Baal-Peor and the site of Bamoth-Baal; he discovered the method by which the enormous stones used at Arak el Emir were brought up from the quarries.—*Lt. Oliver, R. A. F. R. G. S. Quarterly Journ. of Science*, April 1870. See Cairn.

CROOM. BENG. A dip, a ravine, a valley, a hollow.

CROPS. On fertile lands susceptible of irrigation, British India enjoys two crops during the year, one called the Kharif, or rain crop, sown in June and reaped in October; the other sown in October, and reaped in March and April, called the Rabi, or cold-weather crop. The latter, embracing the months which approximate in temperature to that of the season of cultivation in colder countries, corresponds with them also in the nature of the plants cultivated, as, for instance, wheat, barley, oats, and millet; peas, beans, vetch, tares, chick-pea, pigeon-pea, and lentils; tobacco, safflower, and succory; flax, and plants allied to mustard and rape, as oil-seeds; carrot, coriander, and cumin, and other seeds of a similar kind, as ajwain, sonf, soya, aneesun. In the rainy season, a totally different set of plants engages the agriculturist's attention, as rice, cotton, indigo, and maize, with sorghum, pulse, joar, koda, most of the tropical legumes, as well as several of the cucumber and gourd tribes, together with the sesamum for oil, and varieties of the egg-plant as a vegetable. The sunn and sunnee, two cordage plants, are also cultivated at this season.

Dr. Royle gives the following arrangement of the countries of which the plants will grow in the different parts of India:—

Tropical and East Indian islands, tropical Africa, Brazil, Guiana, W. India, and Florida.	Travancore, Cochin, Malabar, Ceylon, Malay Peninsula, Chittagong, Bengal, Lower Assam.
East and west coast of Africa.	Coromandel coast, Northern Circars, Konkan.
S. States of N. America, Egypt, n. of Africa, Syria.	Gujarat, Behar, Doab, Delhi, Malwa.
Mexican highlands, lower mountains of Spain.	Mysore, hilly ranges in Dekhan, Rajputana.
S. of Africa, extra tropical N. Holland, S. America beyond lat. 23° S.	S. Jharanpur and Northern Doab.
Mediterranean region.	Delhra Doon, and Himalayan valleys to moderate elevations.
Chino-Japanese region, Middle Andes, Peru, and mountains of Brazil.	Neilgherries, Upper Assam, Himalayan mountains.
North of Europe, north of Asia, and North America.	Himalayan mountains, regions of oaks and pines.
Arctic regions, mountains of Europe, elevated Andes.	Himalayas above region of forest.

The Tamil-speaking countries in the S.E. parts of the Peninsula have the benefit of the N.E. monsoon; their principal rice crop, called Karupanta, is sown during the wet season; a lesser crop is sown in the spring and reaped in the rains.

Penicillaria spicata, in the Cuddapah district, is usually sown mixed with nine other seeds. *Dolichos uniflorus*, *D. sinensis*, *Phaseolus mungo*, *Cicer arietinum*, *Cajanus indicus*, *Lablab vulgaris*, *Sesamum orientale*, and *Hibiscus subdariffa*.

The ragi crop (*Eleusina, species*) is usually sown mixed with *Lablab vulgaris*, this pulse being put in lines, without reference to the ragi crop, being dropped in a furrow made with the native plough. Mixing crops is of value: it serves the purpose of an alternation of crops, as the plants differ in demands on the soil; the variety increases the chances of success; and, as they ripen at different stages, they give continuous work to the ryot and his family.

56·2 per cent. of the adult male population of British India are engaged in agriculture, the total

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being 34,844,000. The number of persons returned as engaged in agriculture and in tending or dealing in animals, is 37½ millions; but besides these, the boys and girls and wives of a household, and many tradesmen and artisans, own land which they cultivate by the aid of the younger members of the family. The farms of India are all small, and the machinery and capital proportionate. The farmer works the soil himself, assisted at times by relatives, labourers being rarely hired. The plough is light and rude, and the draught cattle are in general small; but the fields are ploughed and re-ploughed a dozen times, and freely exposed to the weather. The crops raised are excellent; and no Mahomedan, European, or East Indian has ever been able to compete with the Hindus.

In Mysore, where the ragi and other dry grains occupy about 80 per cent. of the cultivable area, —rice 10 per cent.,—little has been done to provide water for artificial irrigation.

Very good land in Bengal will yield 48 maunds per acre, and in exceptionally good lands 53 maunds. In an ordinary year, in that good land, the range may be 36 to 40 maunds. Ordinarily fair low land in a really good year, from 30 to 36 maunds; and, on an average of ten years, 18 to 24 maunds. Poor or high sandy lands, 18 maunds, or, on an average, 12 to 13 maunds. The average of all classes of land, 15 maunds per acre. (Lieut. Otley in *Mor. and Mat. Pro.*, 1874-75, pp. 36-37.)

In the Upper Provinces of N. India, the following is the detail of seed sown per acre, and the yield, of the more ordinary crops:—

Grain.	Seed per Acre.	Yield per Acre.	Grain.	Seed per Acre.	Yield per Acre.
Wheat, .	1 10 18 0	16m. 0s.	Urd, .	0m. 7½s.	6m. 0s.
Barley, .	1 10 18 0	16m. 0s.	Mothil, .	0 0 6 0	6 0
Pearl, .	1 0 10 0	10 0	Makro, .	0 2½ 9 0	9 0
Sesam, .	0 0½ 1 0	1 0	Kakun, .	0 2½ 5 0	5 0
Kuaridhan, 1m. to 45s. 12 0			Sanae, .	1 0 10 0	10 0
Sathi dhan, 1m. to 45s. 12 0			Pattua, .	0 0½ 0 3	0 3
Jarlian, .	1m. to 45s. 12 0		Cotton - Kapas, Radhia, .		
Maize, .	0m. 7½s. 6 0		Maruva, .	0m. 4s. 4 0	4 0
Bajra, .	0 2½ 7 20	7 20	Jethi dhan, 1 20 10 0		10 0
Juar, .	0 7½ 7 20	7 20	Sawan, .	5m. to 4s. 12 0	12 0

One of the most important points for the Indian statesman is to discover other industries than that of the production of food, in order to give profitable employment to the varied capacities of the people. A large addition to the production and manufacture of tobacco, sugar, wool, silk, jute, paper, etc., would have this effect, and this could be obtained without curtailing the supply of food, by the addition of one-tenth to the yield of food crops,—a result that might easily be brought about if greater attention was paid to the cultivation. This would set free an area covering 20 million acres, which would add 200 millions sterling to the general wealth, at the moderate value of £10 per acre, when the crops were converted into a manufactured product by the well-employed industry of the people. To aid in this, further attention to artificial irrigation is needed. The inferior pulses are greatly dependent on rain; but for garden cultivation, as for the vegetables, the poppy, tobacco, and sugar-cane, artificial irrigation is indispensable everywhere, except in low-lying lands near rivers. Every tank should be kept in repair, wells sunk wherever water is to be met with, and manure largely used. Mr. Schrotty says that in the middle of the 17th century the average quantity of rice produced in India from each acre of land was 1338 lbs.; of wheat, 1155 lbs.; cotton, 670 lbs., unpicked, which is equal to

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223 lbs. of picked. But the statistics of the 19th century show that the land yields rice now at an average of 800 to 900 lbs. per acre; wheat, 660 lbs.; and picked cotton, 52 lbs. In 1828, certain lands in Central India yielded 128 lbs. of cotton per acre. In Broach, in 1844, the yield was 83 lbs.; and at the present time the quantity produced does not come to above 83 lbs. And the conclusion arrived at is that the land is becoming poor, and unless it gets a portion at least of what is taken from it, its producing qualities will still further deteriorate.—*Carnegy.*

CRORE| or Kror, ten millions. A crore of rupees is equal to one million sterling. The names of the higher numbers, Elliot says, are thus given in the *Zablat-ul-Quanin*:—

100 crore = 1 urub.	100 pudum = 1 sunk'h.
100 urub = 1 k'hurub.	100 sunk'h = 1 uld.
100 k'hurub = 1 neel.	100 uld = 1 unk.
100 neel = 1 pudum.	100 unk = 1 pudha.

When Akbar introduced his revenue reforms, he appointed a collector for every crore of dams (i.e. Rs. 2,50,000), whom he designated by the title of Amil or Amilguzar; and to that functionary the instructions are directed in the *Ayini-Akbari*; the designation of Crori being of subsequent introduction.—*Elliot.*

CROSS.

Croix, Fr.	Salib, Pers.
Kreuz, GER.	Crux, Sp.
Croce, It.	

The symbol of the circle and the cross, under every variety of circumstance, in Egypt, Africa, Britain, China, Scandinavia, and America, in every age, by every people, from the dawn of secular history to the present hour, has been held by all in the same superstitious veneration, has been honoured with the same distinguishing rites, and has always expressed the same doctrine or mystery. Divine potentiality was sometimes indicated by two or more sceptres arranged at right angles or quadrinally, with the nave of a wheel, or a simple circle, or six or eight round stars, at the point of intersection, with other orbs or ornaments. Osiris by the cross gave eternal life to the spirits of the just. With the cross Thor smote the head of the great serpent. The Mayscamothers laid the children beneath a cross, trusting by that sign to secure them from evil spirits. The cross-cake, says Sir Gardner Wilkinson, was the hieroglyph for civilised land, obviously a land superior to their own, as it was indeed to all other mundane territories; for it was that distant traditional country of sempiternal contentment and repose, of exquisite delight and serenity, where nature unassisted by man produces all that is necessary for his sustentation, and whose midst was crowned with a sacred and glorious eminence,—the umbilicus orbis terrarum,—towards which the heathen in all parts of the world and in all ages turned a wistful gaze in every act of devotion, and hoped to be admitted, or rather to be restored, at the close of this transitory scene. The Crux ansata is the earliest known form of the cross. It is commonly called the key of the Nile, because often seen on Coptic and Egyptian monuments. It was very similar to the Roman letter T, with a roundlet or oval placed immediately above it, and signified hidden wisdom or the life to come. It was used by the Chaldeans, Phœnicians, Mexicans, and Peruvians; doubtless it was intended to denote the solar and terrestrial

spheres. And, subsequently, sovereigns each adopted the circle, associated with it the cross, and this symbol of royalty is in use with every king of Europe. The Chakra in the hands of Brahma, Vishnu, and Siva, is a modification of it. In Egypt and China it was used to indicate a land of corn and plenty; and, when divided into four equal segments, it was the symbol of the primeval abode of man, the traditional paradise of Eden. The cross, says Colonel Wilford (As. Res. x. p. 124), though not an object of worship amongst the Buddhists, is a favourite emblem and device amongst them. It is exactly the cross of the Manichees, with leaves and flowers springing from it, and fruit also, it is said. It is called the divine tree, the tree of the gods, the tree of life and knowledge, and productive of whatever is good and desirable, and is placed in the terrestrial paradise.

The pre-Christian cross is not unfrequently associated with a tree or trees. The sign of the cross began to be used by Christians in the fourth century, and is described by Lactantius as an impregnable fortress to defend those impressed with it, for such the devil cannot approach. The use of the pre-Christian cross, either in the form of the handle cross of the Mediterranean districts, or the swastika † of the Buddhists, was widely spread amongst ancient peoples, and it is in use at the present day over all Buddhist and Hindu countries. Mr. W. King has described many cruciform monoliths at Mungapet, in the Paluncha taluk, on the right bank of the Godavery on the road to Hanamconda, in the Nizam's dominions.—*Journal Bengal Asiatic Society*.

CROSS, ROBERT, a skilled gardener who aided Mr. Clements Markham, C.B., in introducing cinchona trees (1860–1879) and caoutchouc trees (1875) into India from S. America, species of castilloa. He made five journeys to procure cinchona plants.—*Markham, Peruv. Bark*.

CROSSBILL, *Loxia himalayana*, *Hodgson*, inhabits the pine forests.

CROTALARIA, a genus of plants of the order Fabaceæ, sec. B. lotææ, of which about 40 species are known in India. The fibres of the barks of *C. Burhia*, *C. juncea*, and *C. retusa* are largely used as cordage material. *C. juncea* yields the sunn of commerce; the *C. tenuifolia* furnishes the Jubbulpur hemp.—*W. Ic.*

CROTALARIA BURHIA. *Ham. Buch.*

Khip, Bhata, Bui, *BEAS*. Buta, Khep, . . . *SUTLEJ*.
Lathia, Kharsan, . . . *HIND.* Sia, Sissai, . . . *TR.-IND.*
Drannoo, . . . *SIND.* Meini, Pola, . . . "

A naked-looking, bushy plant, common in Sind and in all the more arid parts of the Panjab, from Delhi to Trans-Indus up to Peshawur. It is browsed by cattle. It has a very tough bark, and with exactly the smell of broom when bruised, which probably gets it the name Bui, fragrant. Twine and small ropes are in many parts made from it by the dry process (and apparently sometimes after two or three days' steeping), but notably not so in places near Delhi, where the khip used for this is from *Orthanthera*, a very different plant.—*Stewart*.

CROTALARIA JUNCEA. *Linn.*

O. Bengalensis, *Lam.* *O. porrecta*, *Wall.*
O. tenuifolia, *Rozb. iii.* 203. *O. sericea*, *Willd.*
O. fenestrata, *Sims.*

Kudrum of . . . *BEHAR.* Salsette hemp, . . . *ENG.*
Ghore-sun, . . . *BENG.* Sunn, . . . *HIND.*
Maesta pat, . . . " Pallungoo of *MADRAS.*
Tang, Ambharee, *BOMBAY.* Ambaya pata of *PURNEY.*
Pan, Paik haan, . . . *BURM.* Sanni of *SAHARUNPUR.*
Pulai namaji of *COIMBAT.* Sana, . . . *SANSK.*
Chumpat, Chumese, *CUTT.* Kenna, . . . *SINGH.*
Madras hemp, . . . *ENG.* Wakkoo, Janapam, *TAM.*
Jubbulpur hemp? . . . " Shanai, . . . " "
Dekhani brown hemp, . . . " Sannamu, . . . *TEL.*

The *Crotalaria juncea* is cultivated for its fibre in many parts of India. Its fibres make a good strong hemp for cordage, canvas, gunny, and sackcloth, twine and paper. It is sown very thickly at the beginning of the rains, so that it may grow tall and thin, and in favourable soil it grows to 8 or 10 feet high. When it begins to flower, it is cut near the root, tied in large bundles, and immersed in water, putting some weight on it, generally mud, to prevent it from being carried away. After remaining immersed from four to eight days, it is withdrawn from the water, taken by handfuls, beaten on a piece of wood or stone, and washed till quite clean, and the cuticle with the leaves completely removed from the other portion of the plant. Each handful is then piled musket fashion, and left to dry. When perfectly dry, the woody portion, which has been more or less broken, is separated from the fibre by further beating and shaking. From 3 to 6 maunds of fibre are extracted from each bigha of plant. The raw material on the field, as plant, costs from two to four rupees per bigha, according to quality; and the prepared fibre costs from four to ten rupees per maund, according to strength, length, and cleanliness of fibre.—*Rozb.*; *Royle*.

CROTALARIA LABURNIFOLIA. *Linn.*

C. pendula, *Bert.* *C. pedunculosa*, *Desv.*
Muna, . . . *BENG.* Pedda gili gich-cha, *TEL.*
Chiri gili gich-cha, *TEL.* Manne, . . . "

Grows from Ceylon to Bengal; has large, bright yellow flowers.—*Voigt*; *Elliot*.

CROTALARIA LINIFOLIA. *Linn.*

C. caespitosa, *Rozb.* Nella giri gili gich-cha, *TEL.*
A native of most parts of India.—*Voigt*.

CROTALARIA OCCULTA, the pea violet; grows very common by the roadside between Cherra and the Eastern Khasya Hills, and smells deliciously of violets.—*Hooker, Jour. ii.* p. 309.

CROTALARIA RETUSA. *Linn.*

Bil-junjun, . . . *BENG.* Tandal ekoti, . . . *MALEAL.*
Wedge-leaved crotalaria. Potti gili gich-cha, *TEL.*

This plant grows in the Peninsula of India, in Bengal, Burma, and the Moluccas; has large, bright yellow flowers; the fibres are employed for canvas and cordage. It yields the fibre known in England and Calcutta as Jubbulpur hemp, which is considered equal to Russian hemp, and bears a heavier weight. Dr. Royle reported as under:—

Kind and quality of Rope.	Size.	Government	Breaking
		Proof.	Weight.
Oiled Jubbulpur hemp, artillery traces,	Inches. 3	Cwt. 36	Cwt. qr. 43 2
Untarred do., superior four-strand, plain laid, . . .	3½	42	83 0
Untarred Dhunchee (<i>Eschynomene cannabinæ</i> , <i>Rozb.</i>), <i>Sesbania aculeata</i> , . . .	3½	49	75 0
Pine-apple fibre,	3½	42	57 0

CROTALARIA VERRUCOSA. *Linn.*

C. cærulea, *Jacq.* *C. angulosa*, *Lam.*
Bun-sun, . . . *BENG.* *HIND.* Ghilghirinta, . . . *TEL.*
Pi-tandali-kotti, *MALEAL.* Alla-gili-gich-cha, . . . "
Vutti-khillu-killupi, *TAM.*

Grows in Malabar and Bengal. It has bright blue and greenish-white flowers. The juice of its leaves is used in medicine.—*Voigt*.

CROTALIDÆ, a family of reptiles of the order Ophidia, and sub-order Serpentes viperini.

CROTON, a genus of plants of the natural order Euphorbiaceæ. The species of India and the Archipelago are,—*C. aromaticum*, bicolor, drupacea, iliciodora, jofra, lævigata, lacciferum, microdenia, Moonii, muricatum, nigro-viride, oblongifolia, pavanum, polyandrum, tiglium, urophylla, umbellatum. The seeds and oil of *C. polyandrum* and *C. tiglium* are purgative. A species of croton, whose roots are used by the Burmese for a cathartic, abounds in some parts of Burma, especially on the Moulmein hills.—*Mason*.

CROTON AROMATICUM. *Linn.* Wel-kappiteya, SINGH. Abundant in the hotter parts of Ceylon.—*Thw.* p. 275.

CROTON HYPOLEUCUM. *Dalz.* *C. reticulatum*, *Heyne*; grows in the central province of Ceylon, at 2000 to 3000 feet.—*Thw.* p. 276.

CROTON LACCIFERUM. *Linn., W. Ic.*
Alenrites lacciferus, Willd. | *Ricinoides aromatica arbor, Burm.*
Croton foliis ovatis, etc., | *Gass-kappiteya, SINGH.*
Fl. Zeyl.

A native of the East Indies, very common in Ceylon up to 3000 feet; trunk arborescent, with rude and angular branches, and is said to furnish the finest of all the sorts of lac, of a bright red, and also to furnish a brilliant varnish in Ceylon.—*Thw.* p. 275; *Eng. Cyc.* p. 212; *O'Sh.* p. 553.

CROTON OBLONGIFOLIUM. *Roxb.*

C. lævigatum, Wall.

Bhutam kusam, SANSK. | Bhutala bhairi, . . TEL.

A small tree not uncommon in S. India and Ceylon. The Telugu name means demon-driver or devil-goat, sticks made of it being carried as a protection against evil spirits.—*Voigt*; *Elliot*; *Thw. Zeyl.* p. 276.

CROTON POLYANDRUM. *Roxb.*

Croton Roxburghii, Wall. | *Croton polyandra, Roxb.*
 Dunti, . . . BENG. | Hakni; Hakun, . HIND.
 Tha-dee-wa, . . BURM. | Konda amadum, . TEL.

Grows in the Circars, Bengal, and Hindustan, near hills and streams in moist places. Perennial; seeds exactly like those of the castor-oil plant, but much smaller. Esteemed by the natives of India to be a good purgative, one seed bruised with water being given for each evacuation desired. The Burmese cultivate this species of croton, which grows into a thick bush. It is very common also on the banks of the Jumna, where it is called Jumalghota.—*Royle*; *O'Sh.*; *Roxb.*

CROTON SANGUISFLUINA, the blood-wood of Norfolk Island; is said to be of little value except for firewood. On an incision being made in the bark, a fluid exudes which is used for marking the convicts' slopes, staining furniture, etc.; and it is a good tonic and astringent, strongly resembling dragon's blood (*Dam-ul-ukwain*).—*O'Sh.*; *Keppel's Ind. Arch.* ii. p. 282.

CROTON SCABIOSUM. *Bedd.* A small tree on the Nullaymallay mountains, Kurnool district, where it is most abundant about the Yerrachalna (2000 to 3000 feet elevation); its very silvery appearance renders it highly ornamental.—*Beddome, Fl. Sylv.* p. 283.

CROTON TIGLIUM, Croton-oil plant.

Croton Jamalgota, Buch. | *Tiglium klotchianum, Rk.*

Batu, also Dund, . . ARAB. | *Juphiota Ruttunjota, PANJ.*
 Jymal; Reeluk, . . BENG. | Dund, . . . PERS.
 Kannakoh, . . . BURM. | Jayapala; Nepala, SANSK.
 Jayapala, . . . CAN. | Dunti, . . .
 Jamalgota, . . . HIND. | Nepalam, . . . SINGH.
 Bori, . . . MALAY. | Nervalam, . . . TAM.
 Nirvala, . . . MALEAL. | Nepalum, . . . TEL.
 Kadel-avanaku, . . .

This small tree grows to 15 or 20 feet high in most parts of India, Assam, and the Moluccas. Every part of the plant is purgative, but the fruit or seeds are dangerously so, and in the medicinal practice of Europe they are never given, though in India native practitioners separate the embryo, and give it internally. The seeds yield a powerfully cathartic oil, by grinding the seeds, placing the powder in bags, and pressing it between plates of iron. The oil is then allowed to stand 15 days, and afterwards filtered. The residue of the expression is saturated with twice its weight of alcohol, heated on a sand-bath from 120° to 140° Fahr., and the mixture pressed again; the alcohol is distilled off, the oil allowed to settle, and filtered after a fortnight. One seer (2 lbs.) of seed furnishes 11 fluid ounces of oil,—6 by the first process, 5 by the second.

Croton Oil. Napala oil; Tigllii oleum.

Dund, also Batu, . . ARAB. | Dund, . . . PERS.
 Kannakoh, . . . BURM. | Nirvalam yennai, . TAM.
 Jamalgota-ka-tel, . HIND. | Naypalam nuna, . TEL.
 Bori, . . . MALAY.

This oil is prepared by grinding the seeds of *C. tiglium*, placing the powder in bags, and pressing between plates of iron. The oil thus expressed is allowed to stand about a fortnight, and then filtered. It is of an orange-yellow colour, is soluble in alcohol, and reddens litmus paper powerfully. It is an exceedingly powerful cathartic. It has a heavy oily smell, and is very irritating to the skin. It is procurable in most Indian bazars, often adulterated with castor-oil and other fixed oils. The seeds are administered by native doctors; and when the operation is excessive, they give the patient the juice of the sour lime, which is said to counteract the effect of the croton seeds.

Croton Seed.

Hub-ul-maluk, . . ARAB. | Cheraken, . . . JAV.
 Pa-tau, . . . CHIN.

The seeds of *C. tiglium* are about the size of a small marble, of a convex shape on one side, and bluntly angular on the other, enveloped in a thin shell.—*Faulkner*; *Ainslie*; *Royle*; *Roxb.*; *Voigt*; *O'Sh.*; *Lindley*; *Jur. Rep.*

CROTON VARIEGATUM, an ornamental shrub, commonly called the laurel; the leaves are variegated. There is a willow leaf variety equally ornamental and handsome; the plants thrive best in large pots or tubs, shaded from the noonday sun.—*Jaffrey*; *Graham*; *Thomson's Records*.

CROWS.

Corneille, . . . FR. | Cantare, . . . IT.
 Krahen, . . . GER. | Kaka, . . . SANSK., TAM.
 Kowa, . . . HIND. | Ciurvo, Barra, . . . SP.

Conostoma cernodium, one of the Rasorial Crows, of the sub-family Glaucopinae, inhabits the northern region of Nepal, and in Celebes; and on the Malabar coast black and white crows occur, also occasional albinos. The crow is reckoned a bird of ill-omen in India; still Malabar women are sometimes named Kaka, the name in that dialect, as well as in Sanskrit, for the crow. The females

of Malabar are, more than others, called after animals. Mani, the crocodile, is a name among them. In Christian countries, Barbara, Ursula,—Barbarian and Little Bear,—are not unusual. The crows incubate chiefly in March and April. The common crow of India is of unwonted familiarity, impudence, and matchless audacity. Mr. Sirr mentions a crow seizing bread from a toast-rack, and another taking food from a dog while eating. Sir James E. Tennant mentions that one of these ingenious marauders, after vainly attitudinizing in front of a chained watch-dog, that was lazily gnawing a bone, and after fruitlessly endeavouring to divert his attention by dancing before him, with head awry and eye askance, at length flew away for a moment, and returned bringing a companion, which perched itself on a branch a few yards in the rear. The crow's grimaces were now actively renewed, but with no better success, till its confederate, poising itself on its wings, descended with the utmost velocity, striking the dog upon the spine with all the force of its strong beak. The dog started with surprise and pain, and the bone he had been gnawing was snatched away by the first crow the instant his head was turned. The *Corvus culminatus*, or large black crow of India, may be constantly observed wherever there are buffaloes, perched on their backs, and engaged, in company with the small minah (*Aceridotheres tristis*), in freeing them from ticks. —*Tennant's Ceylon*; *Sirr's Ceylon*. See *Corvidæ*.

CROZOPHORA PLICATA. *Juss.*

Croton plicatum, *Vahl.* | *C. tinctorium*, *Burm.*
 Khoo-di-okra, . . . BENG. Subali, . . . HIND.
 Indian turnsol, . . . ENG. Linga maram, . . . TAM.
 Saha-devi, Nilak-rai, HIND. | Linga manu, . . . TEL.

Common in all the south of India, in rice-fields, flowering in the cold weather. Its value in leprosy is asserted. The juice of its green leaves dyes blue.—*Voigt*.

CRUCIBLE. *Musa*, *TEL.* In India, these are made by coppersmiths, etc., for their own use, of pipeclay or other suitable clay, beaten up for a considerable time on the anvil with burnt paddy husk; being formed, they are left to dry and are then ready for use. Mr. Rohde had seen a crucible formed for melting silver, simply by spreading wet clay on a bit of rag, which was immediately placed on the fire, which again was urged by the breath through a bamboo tube.—*Rohde, MSS.*

CRUCIFERÆ. This order of plants is so called from the four flower-leaves (petals) being disposed, more or less distinctly, in the form of a cross, as in the wallflower, cabbage, and cress. Nearly all are herbaceous; none are poisonous, though they are generally a little acid; they are especially antiscorbutic.

CRUDE, a commercial term applied to raw and unrefined products, as crude camphor, crude tartar, crude midsummer root.

CRUDIA ZEYLANICA. *Thw.* A large tree, of Galpaata, near Caltura.—*Thw.*

CRUSADES, military expeditions made from Christian countries in the 11th to 13th centuries, to recover the sacred buildings famed from the first origin of Christianity. At the time of the first crusade, the Mahomedan power was shared between those of Arab and those of Mongol origin. The Arab movement had been stayed by their defeat by Charles Martel, on the banks of the river Loire,

and they had settled down in the countries which they had conquered, advancing in civilisation and cultivating science. But later, the fresh converts to Mahomedanism, the Seljukian Turks and Tartars, issued from Central Asia, carrying ruin in their path. Asia Minor was lost to the Greek empire, and Constantinople itself imperilled, when Peter the Hermit roused Christian Europe to recover the Holy Sepulchre at Jerusalem. It was subsequently, in 1187, lost again by the conquest of Salah-ud-din; and at the time that St. Louis of France took the cross, Chengiz Khan with his followers had so ruined the whole tract from the Caspian to the Indus, that the succeeding centuries have not sufficed to restore it. The right wing of this enormous host was bringing ruin on the Slav nations of eastern Europe, while its left wing was menacing Baghdad and Syria. Poland and Hungary were invaded in 1258, and they had entered Bohemia and Moravia. Frederick II., in 1229, after Salah-ud-Din's death, recovered the Holy City, but it was again finally lost to the Kharasmanian Turks, who destroyed every Christian whom they found. Not long after, the Christians were again defeated at the battle of Gaza, which was fought in company with Malik Mansur, the ruler of Damascus, against the king of Egypt. St. Louis made two crusades, in the first of which he was completely defeated. The Ayubi are descendants of Salah-ud-Din. The family are known as the Hasan Keif, and occupy the district of Shirwan. In Mr. Rich's time, the Bey was powerful and independent. See *Acre*; *Eyubi*; *Kafra*.

CRUSTACEA are the Crustacea of the French, and the Krustenthiere of the Germans. The common crab, the lobster, and crayfish, the common shrimp and the water-flea, may be taken as types of different sections of this family.

Cancer is a genus of short-tailed crustacea, and is the type of the family Canceridæ of Linnæus; it includes a large number of species of the genus *Cancer*; and the term *Crab*, which is a translation of it, is in common parlance applied to the great bulk of the brachyurous crustaceans. Dr. Leach restricted the genus *Cancer* to the form of *Cancer pagurus*, *Linn.*, the large eatable crab of British coasts, which was, when he defined the genus, the only species known. For the Blood-spotted Crab of the Asiatic seas (*Cancer maculatus*, *Linn.*, etc.), and the Coralline Crab (*Cancer corallinus*, *Fabr.*), Dr. Leach instituted the genus *Carpilius*, characterized by the existence of a single tooth on the border of the carapace, and by the tridentated front; and for the 'Eleven-toothed Crab' (*Cancer undecimdentatus*, *Fabr.*), *Egeria* is a genus of brachyurous decapod crustaceans established by Dr. Leach. *E. Indica*, in size, general form of the body, and length of the feet, bears a great resemblance to *Inachus scorio*; but, besides generic differences, the arms are rather short and slender. It inhabits the Indian seas. The Hermit Crabs are very common; and the nimble little Calling Crabs, *Gelasimus tetragonon*, *Edw.*, *G. annulipes*, *Edw.*, *G. Dussumieri*? *Edw.*, scamper over the moist sands, carrying aloft their enormous hand, sometimes larger than the rest of the body. They are of the E. and W. Indies. They bore holes for themselves in the black soil of the coasts. On some coasts of the East Indies the sands at ebb-tide swarm with them. They are

the food of the inshore sea fishes, and some of them are the best bait that can be used; and one species of *Gelasimus* is common in the cassava fields of Brazil.

Several small crabs are parasites, or take shelter within other animals. *Cymothoe*, a genus of the Indian Ocean, is too imperfectly organized to catch its own food, and the species take up their home in the mouth cavity of fishes of the genus *Stromatea*, where they snap up all that comes within their reach; *Cymothoe stromatei* is found inside the mouth of *Stromatea nigra* on the Comandul coast; another species has been found in the mouth of a *Chetodon*, and inside that of a *Cyprinus* of the Amur, and the *Ceratothoa exoceti* has been found within the mouth of the flying fish.

Ostracotheres tridacnæ, *Ruppell*, is a little crab which lives within the great *tridacna* mollusc, whose immense shell serves in European churches as a vessel for holy water. The crab takes shelter in the branchial chamber. *Conchodytes tridacnæ* inhabits the *Tridacna squamosa*; the *Conchodytes meleagrina* lives in the shell of the pearl mussel; the *Epichtys giganteus* lives on a fish of the Indian Archipelago; the *Ichthyoxenus Jellinghausii* lodges in a fresh-water fish of the island of Java. *Pinnotheres* is a genus of small crabs which live within mussels, amongst others the *Avicula margaritifera* or pearl mussel, and in the holothurians of the Philippine Islands, and *Pin. Fischerii* is of New Caledonia; one species lives within the *Chama*.

Again, species of *Pagurus*, about 30 in number, all lodge in deserted shells, and change their dwelling-places as they grow older. They are known as the Hermit Crabs. Darwin thinks (p. 544) that certain species always use certain kinds of shells. Their abdomen is too soft to be exposed. In the Keeling islands, the large claws of some of the hermit crabs are beautifully adapted, when drawn back, to form an operculum to the shell.

Crustacea, occupying deep waters in places to which light is inaccessible, are found without eyes. Three species of *Amphipoda* and one *Isopoda*, from Kaiapoi, New Canterbury, New Zealand, were found in this state.

The *Birgus latro* of the Keeling islands is famed for the skilful manner in which it tears off the husk and opens the cocoanut, in order to extract the medullary matter of the interior. It is a kind of intermediate link between the short and long tailed crabs, and bears a great resemblance to the *Paguri*. Darwin observed that they live on the cocoanuts that fall from the trees. The story of their climbing these palms and detaching the heavy nuts is mere fable. Its front pair of legs are terminated by very strong, heavy pincers, the last pair by others narrow and weak. To extract the nourishment, it tears off the husk, fibre by fibre, from that end in which the three eyes are situated, and then hammers upon one of them with its heavy claws until an opening is effected. It then, by its posterior pincers, extracts the white albuminous substance. It inhabits deep burrows, where it accumulates surprising quantities of picked fibre of cocoanut husks, on which it rests as on a bed. Its habits are diurnal, but every night it is said to pay a visit to the sea, perhaps to moisten its branchiæ. It is very good to eat, and the great mass of fat accumulated

under the tail of the larger ones, sometimes yields, when melted, as much as a quart of limpid oil. They are esteemed great delicacies, and are fattened for the table.

Several small crabs are destructive to the growing grain crops of the tropics. The rice plant grown on the bolls at the mouth of the Indus, is much cut down by a small black sea crab, called by the people Kooke. Without any apparent object, it cuts down the growing grain in large quantities, and often occasions much loss.

The Land Crabs are migratory, and often take long journeys. They live in the interstices of rocks, in the clefts of trees, and bore holes in the ground.

The *Eriocheir Japonicus* of Manchuria is remarkable for its hairy hand. A curious little crab of the Malacca Straits has been called by Mr. Bate, *Sphærapæia Collingwoodii*, because of its taking in sand to eliminate its food, and ejecting the sand in the form of a pill. The species is gregarious. The *Phyllosoma* are styled Glass Crabs. The large Spider Crab of the Japanese islands, *Inachus Kœmpferi*, has been measured 11½ feet from tip to tip. It is of a bright yellow, with crimson patches.

The *Ocypode ceratophthalmus* of Ceylon burrows in the dry soil, jerking out the sand to a distance of seven feet. Of the Painted Crabs, the *Crabes peintes* and *Crabes violets* of the French, *Grapsus strigosus*, *Herbst.*, is distinguished by dark red marks on a yellow ground. They are found on the reef to the south of Colombo harbour. The Paddling Crabs, *Neptunus pelagicus*, *Linn.*, and *N. sanguinolentus*, *Herbst.*, have their hind pair of legs terminated by flattened plates, to assist them in swimming.

The larvæ of the crab are termed *Zoeæ*. The crab has periodic moultings, during which it escapes from its shell a soft, harmless creature, incapable of exertion or resistance, and would become an easy prey to any of the devourers so numerous in the sea, were it not that so soon as the denudation is complete, a stout crab of the same species takes care of it to the best of its ability, until a new shelly case grow, and it is enabled again to protect itself, and present a strong back to its foe. If the sentinel be removed, another will be found to have taken its place after the next tide, and this will be repeated many times in succession. While the crabs are young, the change of shell is supposed to take place frequently, and there is probably a time when the changes cease. Crabs and other crustacea are said to cast away their limbs when alarmed or frightened, as on the occasion of a thunderstorm, or on the firing of a cannon, and this is believed to be true. When a claw has sustained any injury, it is cast off by the animal, and a new one in due time takes its place. Most land crabs are carrion feeders; a few are vegetarians. Swimming crabs, *Polybius* species, are mostly predacious.

The place of the crabs amongst the crustacea is well defined.

Latreille, Desmarest, Leach, the two Milne-Edwards, De Haan, Dana, Heller, and Stimpson, have been among the most prominent systematic writers on the Crustacea; and of the naturalists of the present day, M. A. Milne-Edwards of Paris, Mr. Miers of the British Museum, M. de Man of Leyden, and Prof. Wood-Mason of Calcutta, have paid

especial attention to the Crustacea of the Indian and Malaysian regions.

CLASS, CRUSTACEA.

ORDER, DECAPODES.

1st Division, Podophthalmien, *Edw.**Fam. Oxyrhinques. Tribe, Macropodes.*

Rgeria arachnoides, Edw., Coromandel coasts.
E. Herbetii, Edw., Asiatic seas.
E. Indica, Edw., Indian Ocean.
Dooles ovis, Edw., Indian seas.
D. hybrida, Edw., Coromandel coast.
D. muricata, Edw., E. Indies.
Pisa styx, Edw., Mauritius.
Chorinus arica, Edw., Coromandel.
C. aculeata, Edw., Asiatic seas.
C. Dumerilii, Edw., Vanicoro.
Paramithrax Peronii, Edw., Indian Ocean.
P. barbiornis, Edw., New Holland.
P. Gaimardii, Edw., New Zealand.
Micippe cristata, Edw., Java coasts.
M. phyllra, Edw., Indian Ocean, Mauritius.
Paramicippe platipes, Edw., Red Sea.
Pericora cornigera, Edw., Indian Ocean.
Stenocinops cervicornis, Edw., Mauritius.
Monathius monoceros, Edw., Red Sea, Indian Ocean, Mauritius.

Halimus arica, Edw., Indian Ocean.

H. auritus, Edw., Indian Ocean.

Tribe, Parthenopiens.

Eumedonus niger, Edw., China coasts.
Lambrus longimanus, Edw., Pondicherry, Amboyna, Adon.
L. pelagicus, Red Sea.
L. ochinatus, Edw., Pondicherry.
L. serratus, Edw., Indian Ocean.
L. prehensor, Edw., E. Indies.
L. carenatus, Edw., Pondicherry.
Parthenope horrida, Edw., Indian Ocean, Atlantic.
Cryptopodia fornicata, Edw., Indian Ocean.

*Fam. Cyclometopes.**Tribe I. Cancreriens Cryptopodes.*

Cethra scruposa, Edw., Mauritius, Archipelago.
Cancer roesus, Edw., Red Sea.
C. integerimus, Edw., Indian Ocean.
C. marginatus, Edw., Red Sea.
C. marginatus, Fabr., Andamans.
C. ocyroo, Edw., Asiatic seas.
C. mamillatus, Edw., Australia.
C. sculptus, Edw., Red Sea.
C. limbatus, Edw., Red Sea.
C. Savignii, Edw., Red Sea, Indian Ocean.
C. calcosus, Edw., New Holland.
Carpilius maculatus, Edw., Indian Ocean.
C. convexus, Edw., Red Sea.
Zosymus latissimus, Edw., New Holland.
Z. pubescens, Edw., Mauritius.
Z. tomentosus, Edw., Indian Ocean.
Z. senes, Edw., Indian Ocean.
Xantho hirtissimus, Edw., Red Sea.
X. rufopunctatus, Edw., Mauritius.
X. asper, Edw., Red Sea.
X. scaber, Edw., Sunda Islands.
X. Lamarckii, Edw., Mauritius.
X. Reynaudii, Edw., Indian Ocean.
X. Peronii, Edw., New Holland.
X. impressus, Edw., Mauritius.
X. lividus, Edw., Mauritius.
X. hirtipes, Edw., Red Sea.
X. punctatus, Edw., Mauritius.
X. incisus, Edw., Australia.
X. radiatus, Edw., Mauritius.
Chlorodius unguilatus, Edw., Australia.
C. areolatus, Edw., New Holland.
C. niger, Edw., Red Sea.
C. exaratus, Edw., Indian coasts.
C. sanguineus, Edw., Mauritius.
C. endorus, Edw., New Zealand.
Ozius tuberculosus, Edw., Indian Ocean.
C. truncatus, Edw., Australia.
O. guttatus, Edw., New Holland.
O. frontalis, Edw., Tranquebar.

Pseudocarcinus gigas, Edw., New Holland.
P. Rumphii, Edw., Indian seas.
P. Bellangerii, Edw., Indian seas.
Etisus dentatus, Edw., Ind. Archipelago.
E. anaglyptus, Edw., Australia.
E. inaequalis, Edw., African coast.
Pilumnus fimbriatus, Edw., New Holland.
Ruppellia tenax, Edw., Red Sea.
Eriphia spinifrons, Edw., all seas.
E. levimana, Edw., Mauritius.
Trapezia dentifrons, Edw., Australia.
T. ferruginea, Edw., Red Sea.
T. digitatis, Edw., Red Sea.
Melia trosselata, Edw., Mauritius.

Tribe II. Portuniens.

Platyonichus bipustulatus, Edw., Indian Ocean.
P. natus, Edw., Mediterranean Ocean coasts.
Portunus integrifrons, Edw., Indian Ocean.
Lupes Tranquebarica, Edw., Asiatic seas, Tranquebar.

1st Sub-genus, Lupes nageuses.

L. Pelagica, Edw., Red Sea, Indian Ocean.
L. sanguinolenta, Edw., Indian Ocean.
L. lobifrons, Edw., East Indies.
L. granulata, Edw., Mauritius.
L. gladiator, Edw., Indian Ocean.

THALAMITA.

1st Sub-genus, Thalamitæ quadrilateros.

Thalamita admetæ, Edw., Red Sea, Indian Ocean.
T. Chaptalii, Edw., Red Sea.
T. crenata, Edw., Asiatic seas.
T. prymna, Edw., Australia.

2d Sub-genus, Thalamitæ hexagonales.

T. crucifera, Edw., Indian Ocean.
T. annulata, Edw., Red Sea, Indian Ocean.
T. natator, Edw., Indian Ocean.
T. truncata, Edw., Indian Ocean.
T. callianassa, Edw., Indian Ocean.
T. erythroductyla, Edw., Australia.
Podophthalmus vigil, Edw., Indian Ocean.
Telphusa Indica, Edw., Coromandel coast.
T. chaperon arrondi, Q. and G.
T. perlata, Edw., Cape of Good Hope.
T. Leschenaudii, Edw., Pondicherry.

Tribe, Gecarcinæ.

Cardisoma carnifex, Edw., Pondicherry.
Gecarcinus lagostoma, Q. and G., Australia.
G. carnifex.
G. hirtipes.

Tribe, Pinnotheriens, Edw.

Elamena mathiei, Edw., Red Sea, Mauritius.
Hymenosoma orbiculare, Edw., Cape of Good Hope.
Myctiris longicarpis, Edw., Australia.
Doto sulcatus, Edw., Red Sea.

Tribe, Ocypodiens.

Ocypoda cordimana, Edw., Mauritius.
O. Fabricii, Edw., Oceanica.
O. ceratophthalma, Edw., Egypt, Mauritius, N. Holland.
O. brevicornis, Edw., E. Indies.
O. macrocera, Edw., E. Indies, Brazil.
Gelasimus forceps, Edw., Australia.
G. tetragonon, Edw., Red Sea, Mauritius.
G. cordiformis, Edw., Australia.
G. chlorophthalmus, Edw., Mauritius.
G. annulipes, Edw., Indian seas.

Tribe, Gonoplaciens.

Gonoplax rhomboides, Edw., Ocean, Mediterranean.
Macrophthalmus transversus, Edw., Pondicherry.
M. parvimanus, Edw., Mauritius.
M. depressus, Edw., Red Sea.
Cleistoloma Leachii, Edw., Red Sea.

Tribe, Grapsodiens.

Sesarma tetragona, Edw., Indian Ocean.
S. Indica, Edw., Java.
S. quadrata, Edw., Pondicherry.
Gylograpsus punctatus, Edw., Indian Ocean.
C. Audouinii, Edw., New Guinea.
C. quadridentatus, Edw., New Holland.
C. sexdentatus, Edw., New Zealand.
C. Gaimardii, Edw., New Holland.

CRUSTACEA.

- C. octodentatus, *Edw.*, King Island.
 C. latreillii, *Edw.*, Mauritius.
 C. renicilliger, *Edw.*, Asiatic seas.
 C. pallipes, *Edw.*, New Holland.
 Grapsus strigosus, *Edw.*, Red Sea, Indian Ocean, New Holland.
 G. variegatus, *Edw.*, New Holland, Ohilli.
 G. messor, *Edw.*, Red Sea, Indian Ocean.
 G. plicatus, *Edw.*, Sandwich Islands.
 Plagusia clavimana, *Edw.*, New Holland, New Zealand, Vanicoro.
 P. tomentosa, *Edw.*, Cape of Good Hope, Ohilli.
 P. depressa, *Edw.*, Indian Ocean, China, N. Guinea.
 P. squamosa, *Edw.*, Red Sea, E. Africa, Indian Ocean.
 Varuna litterata, *Edw.*, Indian Ocean.

Fam. Oxytomes.

- Calappa lophos, *Edw.*, Indian seas.
 C. gallus, *Edw.*, Mauritius.
 C. cristata, *Edw.*, Asiatic seas.
 C. tuberculata, *Edw.*, E. Archipelago.
 C. fornicata, *Edw.*, Indian seas.
 Orithya mamillaris, *Edw.*, China seas.
 Leucosia urania, *Edw.*, New Guinea.
 L. eraniolaris, *Edw.*, Indian coasts.
 Myra fugax, *Edw.*, Red Sea, Java.
 Oreophorus horridus, *Edw.*, Red Sea.
 Philyra scabriuscula, *Edw.*, Indian seas.
 P. globulosa, *Leach*.
 Arcania erinaceus, *Edw.*, Indian seas.
 Ixa canaliculata, *Edw.*, Mauritius.
 Nursia Hardwickii, *Edw.*, India.
 N. granulata, *Edw.*, Red Sea.

Tribe, Corystions.

- Iphis septem-spinosa, *Edw.*, Indian seas.
 Nautilocorystes ocellatus, *Edw.*, Cape of Good Hope.
 Dorippe quadridentata, *Edw.*, Indian Ocean.
 D. sima, *Edw.*, Indian coasts.
 D. acuta, *Edw.*, Asiatic seas.
 Caphyra Rouxii, *Edw.*, New Holland.

Fam. Apterygus, *Edw.* Tribe, Dromiens.

- Dromia Rumphii, *Edw.*, E. Indies.
 D. fallax, *Edw.*, Mauritius.
 D. hirtissima, *Edw.*, Cape of Good Hope.
 D. caput mortuum, *Edw.*, Indian Ocean.
 D. unidentata, *Edw.*, Red Sea.
 Dynomene hispidus, *Edw.*, Mauritius.

Tribe, Homoliens.

- Lomis hirta, *Edw.*, Australia.

Tribe, Pactoliens.

- Ranina dentata, *Edw.*, Indian seas, Mauritius.

Fam. Pterygurus. Tribe, Hippieus.

- Albunea symista, *Edw.*, Asiatic seas.
 Remipes testudinarius, *Edw.*, New Holland.
 Hippa Asiatica, *Edw.*, Asiatic seas.
 Pagurus cristatus, *Edw.*, New Zealand.
 P. deformis, *Edw.*, Mauritius, Seychelles.
 P. punctulatus, *Edw.*, Indian Ocean.
 P. affinis, *Edw.*, Ceylon.
 P. sanguinolentus, *Q. and G.*
 P. setifer, *Edw.*, New Holland.
 P. clibanarius, *Edw.*, Asiatic seas.
 P. crassimanus, *Edw.*, South Seas.
 P. tibicen, *Edw.*, South Seas.
 P. elegans, *Q. and G.*, New Ireland.
 P. aniculus, *Edw.*, Mauritius.
 P. gonagrus, *Edw.*, China.
 P. pilosus, *Edw.*, New Zealand.
 P. frontalis, *Q. and G.*, New Holland.
 P. gamianus, *Edw.*, Cape of Good Hope.
 P. miles, *Edw.*, coasts of India.
 P. custos, *Edw.*, coasts of India.
 P. diaphanus, *Edw.*, Oceanica.
 P. hungarus, *Fabr.*, India, Naples.
 Oenobita clypeata, *Edw.*, Asiatic seas.
 C. rugosa, *Edw.*, Indian Ocean.
 C. spinosa, *Edw.*, Asiatic seas.
 C. perlata, *Edw.*, South Seas.
 Birgus latro, *Edw.*, Asiatic seas.
 B. elongata, *Edw.*, New Zealand.
 B. Lamarckii, *Edw.*, New Ireland.
 B. dentata, *Edw.*, Java.

CRUSTACEA.

- B. Asiatica, *Edw.*, Mauritius.
 B. maculata, *Edw.*, New Ireland.
 B. sculpta, *Edw.*, Java.
 B. pisum, *Edw.*, China.

Tribe, Scyllariens.

- Scyllarus rugosus, *Edw.*, Pondicherry.
 S. squamosus, *Edw.*, Mauritius.
 Themis orientalis, *Edw.*, Indian Ocean.
 Ibacus Peronii, *Edw.*, Australian seas.
 I. antarcticus, *Edw.*, Asiatic seas.
 Palmurus Lalandii, *Edw.*, Cape of Good Hope.
 P. fasciatus, *Edw.*, Indian Ocean.
 P. ornatus, *Edw.*, Indian seas.
 P. sulcatus, *Edw.*, Indian coasts.
 P. penicillatus, *Edw.*, Indian Ocean.
 P. dasypus, *Edw.*, Indian seas.

Fam. Thalassiniens.

- Glaucothoe Peronii, *Edw.*, seas of Asia.

Tribe, Gasterobranchides.

- Callianidea typa, *Q. and G.*, New Ireland.
 Callianisca elongata, *Edw.*, Marianne.

Fam. Astaciens.

- Homarus Capensis, *Edw.*, Cape of Good Hope.

Fam. Salicoques. Tribe, Alpheens.

- Alpheus brevirostris, *Edw.*, New Holland.
 A. ventrosus, *Edw.*, Mauritius.
 A. bilens, *Edw.*, Asiatic seas.
 A. chitragiens, *Edw.*, Asiatic seas.
 A. villosus, *Edw.*, N. Holland.
 A. frontalis, *Edw.*, New Holland.
 Pontonia macrophthalma, *Edw.*, Asiatic seas.
 P. armata, *Edw.*, New Ireland.
 P. enfee, *Edw.*, Ceylon, Vanicoro.

Tribe, Palemoniens.

- Hippolyte ventricosus, *Edw.*, Asiatic seas.
 H. Quoyanus, *Edw.*, New Guinea.
 H. spinifrons, *Edw.*, New Zealand.
 H. spinicaudus, *Edw.*, New Holland.
 H. gibberosus, *Edw.*, New Holland.
 H. marmoratus, *Edw.*, Oceanica.
 Rhynchocinetes typus, *Edw.*, Indian Ocean.
 Palenion natator, *Edw.*, Indian Ocean, on Gulf weed.
 P. longirostris, *Edw.*, Ganges mouth.
 P. carcinus, *Edw.*, Ganges mouth.
 P. ornatus, *Edw.*, Amboyna, Waigyou.
 P. Lamarckii, *Edw.*, Bengal coasts.
 P. Tranquebaricus, *Fabr.*, Tranquebar.
 P. hirtimanus, *Edw.*, Mauritius.

Tribe, Pencons.

- Stenopus hispidus, *Edw.*, Indian Ocean.
 Penaeus canaliculatus, *Edw.*, Celebes, Mauritius.
 P. monoceros, *Edw.*, India.
 P. indicus, *Edw.*, Coromandel.
 P. monodon, *Edw.*, Indian coasts.
 P. affinis, *Edw.*, Malabar.
 P. brevicornis, *Edw.*, Indian coasts.
 P. crassicornis, *Edw.*, Indian coasts.
 Penaeus styliferus, *Edw.*, Bombay.
 Oplophorus typus, *Edw.*, N. Guinea.
 Acetes indicus, *Edw.*, Ganges mouth.

ORDER, STOMATOPODES.

Fam. Caridioides.

ORDER, STOMATOPODES.

- Lucifer Reynaudii, *Edw.*, Indian Ocean.
 L. typus, *Edw.*, Indian Ocean?
 Phyllosoma communis, *Edw.*, African and Indian seas.
 P. stylifera, *Edw.*, Indian Ocean.
 P. affinis, *Edw.*, New Guinea seas.
 P. clavicornis, *Edw.*, African and Indian seas.
 P. longicornis, *Edw.*, New Guinea.
 P. Freycinetii, *Edw.*, New Guinea.
 P. laticornis, *Edw.*, Indian seas.
 P. Indica, *Edw.*, Indian Ocean.
 Phyllosoma brevicornis, *Edw.*, African and Indian seas.
 P. stylicornis, *Edw.*, Indian Ocean.
 Phylla serratus, *Edw.*, Port Jackson, Malonines.
 Anisopus dubius, *Edw.*, Mauritius?
 Amphitoe Indica, *Edw.*, Indian Ocean.
 A. Reynaudii, *Edw.*, Cape of Good Hope.
 A. Gaimardii, *Edw.*, New Holland.

CRUSTACEA.

- A. costata*, *Edw.*, Bourbon.
A. Ermannii, *Edw.*, thermal waters of Kamtschatka.
Fam. Hyperinios. Tribe. Ordinaires.
Vibilia Peronii, *Edw.*, Asiatic seas.
Phorus Raynaudii, *Edw.*, Indian Ocean.
Daira Gabertii, *Edw.*, Indian seas.
Anchylomera Blossvillei, *Edw.*, Indian seas.
A. Hunterii, *Edw.*, Bourbon.
Oxycephalus piscator, *Edw.*, Indian Ocean.
O. armatus, *Edw.*, Amboyna and Van Diemen's Land.

ORDER, LEMODIPODES.

- Fam. Caprelliens, or Lemodipodes filiformes.*
Caprella scaura, *Edw.*, Mauritius.
Oyarus erraticus, *Edw.*, on a whale.
O. ovalis, *Edw.*, on a whale.
O. gracilis, *Edw.*, on a whale.

ORDER, ISOPODES.

Section, Isopodes marcheuses.

- Fam. Idoteides. Tribe, Idoteides arpentueuses.*
Idotea rugosa, *Edw.*, Indian seas.
I. Indica, *Edw.*, Malabar coast.
I. Peronii, *Edw.*, Australia.
I. hirtipes, *Edw.*, Cape of Good Hope.

Fam. Asellotes. Tribe, Asellotes homopodes.

- Ligia Brandtii*, *Edw.*, Cape of Good Hope.
Tribe, Cloportides terrestres.
Porcellio truncatus, *Edw.*, Mauritius.
Armadillo nigricans, *Edw.*, Cape of Good Hope.
A. flavescens, *Edw.*, Cape of Good Hope.

DIVISION, TYLOBIENS.

Section, Isopodes nageurs.

Fam. Spheromien.

- Sphaeroma Quoiana*, *Edw.*, Van Diemen's Land.
S. Gaimardii, *Edw.*, New Holland.
S. pubescens, *Edw.*, New Holland.
S. armata, *Edw.*, New Zealand.
S. dicantha, *Edw.*, King Island.
S. perforata, *Edw.*, St. Paul.
Zuazara diadema, *Leabh.*, New Holland.
Cymodocea armata, *Edw.*, Australia.
Cercos tridentata, *Edw.*, King Island.

Fam. Cymothodiens. Tribe, Cymothodiens errans.

- Cimolana elongata*, *Edw.*, Ganges mouth.
C. sculpta, *Edw.*, Malabar.
Alitropus typus, *Edw.*, Bengal.
A. aculeata, *Edw.*, Indian seas.
Anilocra Capensis, *Edw.*, Cape of Good Hope.
Livoneca Raynaudii, *Edw.*, Cape of Good Hope.
L. Indica, *Edw.*, Sumatra.
Cymothoa Mathesi, *Edw.*, Seychelles.
C. frontale, *Edw.*, Asiatic seas.
C. trigonocephala, *Edw.*, China, New Holland.
C. Bankii, *Edw.*, Cape of Good Hope.

Section, Isopodes sedentaires, the Epicarides of Latreille.

Legion, Branchiopodes.

ORDER, PHYLOPODES.

Fam. Apusiens.

- Limnadia Mauritiana*, *Edw.*, Mauritius.
L. tetracera, *Edw.*, Charkow.

ORDER, CYPROIDES OR OSTRACOIDES.

- Cypridina Reynaudii*, *Edw.*, Indian Ocean.

ORDER, COPEPODES.

Fam. Pontiens.

- Saphirina indicator*, *Edw.*, Cape of Good Hope.
S. fulgens, *Edw.*, Atlantic.

Fam. Monocles.

- Cyclops vulgaris*, *Edw.*, Bourbon.

Sub-class, Crustacees suceurs.

ORDER, SIPHONOSTOMES.

Fam. Pellocephales. Tribe, Caligiens.

- Caligus Kroyerii*, *Edw.*, on a didon.
O. scutatus, *Edw.*, Indian seas.
C. Pharonia, *Edw.*, Red Sea, on a chetodon.
Tribe, Pandariens.
Euryphorus Nordmannii, *Edw.*, Asiatic seas.

CRYPTOGAMIC PLANTS.

- Dinemoura affinis*, *Edw.*, Indian seas.
D. ferox, *Edw.*, New Zealand.
Pandarus pallidus, *Edw.*, Asiatic seas.
P. dentatus, *Edw.*, Tongataboo.
Phyllophora cornuta, *Edw.*, Tongataboo.

ORDER, LERNEIDS.

Fam. Chondracanthiens.

- Tucca impressus*, *Edw.*, on a didon.

Fam. Lerneoceriens.

- Penellus Blainvillii*, *Edw.*, on *Exocoetus volitans*.
Lerneonema Lesneuri, *Edw.*, on *Exocoetus volitans*.

ORDER, ARANEIFORMES OR PYCHNOGONIDES.

- Nymphum gracile*, *Edw.*, ocean coasts.
Pallene chiragra, *Edw.*, Bay of Jarvis, New Holland.

Sub-class, Xyphosures.

- Limulus Moluccanus*, *Edw.*, Moluccas.
L. longispina, *Edw.*, China, Japan.
L. rotundicauda, *Edw.*, Moluccas.

— *Tennant's Ceylon*; *Collingwood's Tr. of a Naturalist*; *Eng. Cyc.*; *Ainslie*; *Milne Edwards*; *Darwin*; *Hartwig*; *Bikmore*.

CRUTENDEN, G. S. J., an officer of the Indian Navy, author of a Report on the Mijjarthaza Tribe of Somali, inhabiting the district forming the N.E. point of Africa; also of a Memoir on the Western and Eastern Tribes inhabiting the Somali Coast of N.E. Africa; also of a Journal of an Excursion to Sanaa, the capital of Yemen; Memoir on the Edo, or Tribes of the N.E. Coast, Somali Coast of Africa, Bombay, 1848. He was largely employed in surveying parts of the coasts of the south of Asia. He wrote a journal of his excursion into Dahar.—*Bomb. Geo. Trans.* 1844-46, 1847-49; *E.I. Marine Surveys*.

CRUZCOOL, an opening or strait separating Mascall Island from the Chittagong coast, north of the White Sandcliffs, which are in lat. 21° 17' to 21° 24' N.—*Horsb.*

CRYPTSIRHINA VARIANS, a curious bronze-coloured magpie, common to Siam and Java. *C. varians* is the *Phrenotria temia*, *Horsfield*, and seems to be of common occurrence in the Tenasserim Provinces, where its presence was first remarked by the late Dr. Helfer.—*Wallace*; *Blyth*.

CRYPTOCARYA, a genus of plants, all of them trees, of the natural order Lauraceæ. *C. amygdalia*, *Nees*, of Patgong; *C. floribunda*, *Nees*, of Sylhet; *C. Griffithiana*; *C. membranacea*, *Thw.*, of Saffragam, Ceylon, up to 2000 feet; *C. Wightiana*, *Thw.*, of Ceylon; *C. Stocksii*, *D. C.*, Peninsula of India; *C. Neigherriensis*, *D. C.*, Peninsula of India, are known species.—*Voigt*.

CRYPTOCARYA FLORIBUNDA. *Nees*.

C. Wightiana, *Thw.* | Golu-mora of . CEYLON.

This very large, fine tree is not uncommon in the moist forests of the Western Ghats and in Ceylon, at elevations from 2000 up to 5000 feet; also in the Tinnevely and Travancore ghats, Malabar and S. Canara. In Ceylon its timber is considered valuable for building purposes.—*Thw.*; *R. Br.*; *Wall.*; *Beddome*.

CRYPTOGAMIC PLANTS of the S. and E. of Asia have been little studied. They include acrogens, bryogens, thallogens, and protophytes; ferns, rushes, mosses, fungi, lichens, seaweeds, etc.; and from the lichen tribe and from the algæ, fungi, mosses, and ferns, man derives nutriment and valuable products. Some form articles of commerce, particularly as food-plants, affording gelatinous and amylaceous matter, and being useful in medicine and the arts. The flowerless cryptogamic plants include the

seaweeds, *Porphyra*, *sp.*, laver; *Ulva*, *sp.*, green laver; *Laminaria*, *sp.*, tangle; *Alaria*, *sp.*, bladderlocks; *Iridaea*, *sp.*, and *Rhodymenia*, *sp.*, dulce. Ceylon moss is *Plocaria candida*, and *Pl. tenax* is Chinese moss; *Gracillaria helminthocorton* is Corsican moss, also the *Laurencia obtusa*. Australian moss is the *Eucheuma speciosum*; the edible seaweed of *Valparaiso* is *Durvillaea utilis*; *Sphaerococcus lichenoides* is found on the British coasts. Irish moss is *Chondrus crispus* and *Gigartina mamillosa*, and *Cetraria Islandica* is the Iceland moss. Several of the lichens furnish valuable dyestuffs, particularly species of *Lecanora*, *Rocella*, and *Borreria asch.*—*Food*, 105; *Simmonds*.

CRYPTOLEPIS, a genus of plants belonging to the natural order Asclepiaceæ. *C. elegans*, *C. grandiflora*, *C. pauciflora*, *C. reticulata*, and *C. Buchananii* occur in India.—*W. Ic.*; *Voigt*.

CRYPTOMERIA JAPONICA. *D. Don*.

Cupressus Japonica, *Thunb.*

The *sugi*, or Japan cedar, a beautiful and greatly admired tree of Japan and N. China, is a species of pine not unlike the *araucaria* of Norfolk Islands and Brazil. When growing luxuriantly, it is highly ornamental, rising from the ground as straight as a larch, and sending out numerous side branches almost horizontally from the main stem, which again droop towards the ground in a graceful and weeping manner. It is the finest of all the trees of Japan, rising to 60 and 100 feet high, and five feet in circumference at three feet from the ground. It is seen everywhere in the valleys, and up to 7000 feet on the mountains. The wood of the tree has a kind of twisted grain, and possesses great strength and durability. It is highly valued by the Chinese; and, from its beauty and straightness, is often used by the mandarins and priests for the long poles which are generally seen in front of their houses and temples. It is also well known and highly prized by the natives of Japan as an ornamental tree. It is a most conspicuous tree, evidently in high favour with the priests of Buddha, and well deserves to be so. It succeeds admirably in China, and has been introduced into England, where it is admired.—*Fortune's Wanderings*, p. 128; *Tea Districts*, pp. 16, 212, 304; *F. von Mueller*.

CRYPTOSTEGIA GRANDIFLORA. *R. B.*

Nerium grandiflorum, *Rox.* | *Palay*, . *MALEAL*, *TAM.*

A climbing plant belonging to the family Asclepiadaceæ. It is common in the south of India, and yields a fine silky fibre, capable of being spun into fine yarn, and of employment for many of the purposes to which flax is applicable, suited to the weaving of different qualities of cloths. It seems to be a good substitute for flax, as it is soft, pliant, and susceptible of being split into the finest threads. The stalk contains a large percentage of fibre, besides yielding a milky juice, which solidifies into a gum-elastic of the nature of India rubber; but it has not as yet been collected for the purposes of commerce, and it is doubtful if a sufficient quantity could be obtained to render it an article of trade. The small samples obtained answer well for rubbing out pencil marks from paper. Mr. Underwood made a fair attempt at producing waterproof cloth by simply running the juice over the cloth.—*M. E. J. R.*

CRYPTOTHELEA CONSORTA, the wood moth.

CRYSTAL.

Oristal,	FR., SP.	Balur, . .	HIND., PERS.
Krystall,	GER.	Cristello,	IT.
Koroh,	HEB.		

The word for crystal alluded to in *Genesis xxxi. 40* as ice, and in *Job vi. 16* as frost, and the Hindi-Persic word *Balur*, seem to have been applied indifferently to ice and rock-crystal. Rock-crystal occurs abundantly in many parts of India, and that of the south of the Peninsula is known as vellum stone, from the place of its occurrence. It is said that rock-crystal, if made red-hot, and plunged repeatedly into the tincture of cochineal, takes a ruby hue; if into a tincture of red sandal, it takes a deep red tint; into tincture of saffron, a yellow like the topaz; into a tincture of turnesol, a yellow like the topaz; into juice of nerprum, it takes a deep violet like the amethyst; and into a mixture of tincture of turnesol and saffron, it becomes an imitation of the emerald. Also by steeping the crystal in oil of turpentine, saturated with verdigris or spirits of wine, holding dragon's blood or other coloured resins in solution, depth of tints are produced proportioned to the time of steeping. Crystals can be coloured if heated in a crucible with orpiment and arsenic. Crystals coloured red are false rubies, known in France as rubaces. Cups of rock-crystal were highly prized in ancient Rome; but even in Pliny's time the price of agates, as he calls them, had begun to fall, and now-a-days the Cambay stones formation is so extensive, that the principal use of Cambay stones is as studs, paper-cutters, knife-handles, and murrhine cups.—*King*, p. 178. See *Cambay*.

CSHITJA, *Cacaha*. **SANSK.** The horizon; also the sine of an arc referred to the horizon, used for finding the ascensional difference.—*Warren, Kala Sankalita*.

CSOMA DE KOROS. Alexander Csoma de Koros was a highly learned Hungarian philologist, who died in 1842 on the Himalaya. A memoir of him appeared in the *Bl. As. Trans.* 1841. He bequeathed Rs. 5000 to the Asiatic Society of Bengal. He resided in Kunawar, and at Ladakh and Kanum, from 1828, for the sake of studying the language of the country. An account of Gerard's interview with him appeared in the *Gleanings in Science*, 1829, i. p. 110. He wrote a *Geographical Notice of Tibet* in *Bl. As. Trans.* 1833, i. 121. The Buddhist religious works of Tibet, brought to notice by him, are the *Tanjur*, which consists in its different editions of 100, 102, and 108 folio volumes, and comprises 1083 distinct works. The *Tanjur* consists of 225 volumes folio, each weighing from 4 to 5 lbs. in the edition of Peking; but an edition has also been published at Lhasa and other places; of these De Koros gave an analysis in the 20th volume of the *Asiatic Researches*. See *Pali*.

CTESIAS, *n.c.* 440–370, a Greek of Cnidos, of the Asclepiad tribe, a contemporary of Xenophon and Herodotus. He took service with the Greek mercenaries who joined Cyrus, son of Darius II., in his expedition against his brother Artaxerxes Mnemon, by whom he was taken prisoner at the battle of Cynaxa, *b.c.* 401, 41 miles from Babylon. He became physician to Artaxerxes Mnemon, king of Persia, at whose court he resided for 17 years. During his residence he was able to consult the public archives, and he compiled from them a history of the Persians and of their predecessors in the empire.

of Asia. He also wrote an account of India and its productions, but the absurd exaggerations and fables which this contains have caused all his other works to be viewed with suspicion. He is likewise accused of being led, by extreme jealousy of Herodotus, into direct mis-statements, that he might contradict that historian. Aristotle more than once declares him to be unworthy of credit; and modern critics have generally agreed to reject altogether, or to receive with great reserve, all his assertions. Yet Diodorus Siculus and several ancient authors appear to have followed and trusted him; and it may be observed that whilst mere travellers' tales and vulgar traditions were probably the only sources of his Indian marvels, written records and monuments may have furnished him with well-authenticated historical facts, to assist him in compiling the history of the country in which he resided, and of which he had a personal knowledge. Unfortunately, of his history very little remains, except the names of kings. Much relating to Assyria, contained in the works of others, was, however, undoubtedly copied from him. Ctesias and Isidore both mention a statue pillar of Semiramis at Baplane, but these and the Syriac inscriptions have disappeared. Ctesias mentions the use of swords as lightning conductors.—*Smith's Dictionary of Gr. and Rom.; Yule, Cathay*, i. p. 39; *Layard, Nineveh*, i. p. 15.

CTESIPHON. The Babylonian empire was subverted by Cyrus, who is said to have taken the capital by turning the course of the Euphrates, and marching his troops along the bed of the river into the centre of the city. The walls and temple of Belus are said to have been demolished by Xerxes on his return from the Grecian expedition; but if so, they must have been rebuilt, as they were standing in the time of Alexander. After the building of Seleucia and Ctesiphon, Babylon became gradually deserted; and we learn from St. Jerome that the space within the walls was converted by the Parthian kings into a royal hunting park. From this period we cease to hear of Babylon as a city; but, notwithstanding that so many ages of barbarism and ignorance have passed away, tradition still continues to identify both its name and situation. The town of Hilleh is said by the people of the country to be built on the site of Babel; and some gigantic ruins, still to be seen in its vicinity, are believed to be remains of that ancient metropolis. From her fallen towers have arisen not only all the present cities in her vicinity, but others which, like herself, are long ago gone down into the dust. Since the days of Alexander, we find four capitals at least built out of her remains.—Seleucia by the Greeks, Ctesiphon by the Parthians, Al Modain by the Persians, and Kufa by the Khalifs,—with towns, villages, and caravansaries without number. The ruins of Ctesiphon are to be seen on the eastern shore of the Tigris, 18 miles south of Baghdad; and immediately opposite to it the ramparts and fosse of the Grecian city of Seleucia, which afterwards becoming identified with the former under the name of Ochoe, they assumed, when thus united, the epithet of Al Modain, or the cities. Ctesiphon was most admirably situated, on a sort of peninsula formed by a sudden flexure of the Tigris, which must have embraced the greatest part of the town. Its foundation, however, can hardly be ascribed to any particular person, as it

would seem to have increased gradually, during a succession of many years, from a camp to a city. Pacoras, supposed to be Orodes, king of the Parthians, and contemporary with Anthony, is thought to be the first who surrounded it with walls, and made it the capital of the Parthian empire. It was sacked, together with Seleucia, by the generals of Marcus Aurelius, A.D. 165, and afterwards by the emperor Severus. It became the favourite winter residence of the powerful successors of Artaxerxes, from whom it was taken by Said, the general of the khalif Omar, A.D. 637. The capital was taken by assault, and the tumultuous resistance of the people gave a keener edge to the sabres of the Mahomedans, who shouted with religious transport, 'This is the white palace of Chosroes! this is the promise of the Apostle of God!' The sack of Ctesiphon was followed by its desertion and gradual decay. The Arabs disliked the air and situation of the place, and Omar was advised by his general to remove the seat of government to the western side of the Euphrates; and little now remains but part of the palace of Chosroes, called Tak-i-Kesra, the Arch of Chosroes. It is seen from afar on the plain, and presents a front of 300 feet in length by 160 in depth, having in its centre a vaulted hall 106 feet in height to the top of the arch, the span of which is 85 feet. The Ali Capi at Isfahan, and gates of the palace of Delhi, sink into insignificance beside the Tak-i-Kesra. The city walls, which appear to have been of very great thickness, may also be traced to a considerable distance on both banks of the river. The names of Seleucia and Ctesiphon are very frequently confounded by the early Christian writers; but the cities stood on opposite sides of the river Tigris, and were built at different periods. Mr. Jackson, when proceeding up the Tigris in 1797, passed by the ruins of Ctesiphon, which that river had considerably undermined. There were visible a great many earthen jars, some half-exposed, others ready to fall into the river. Captain Mignon dug into the sides and bases of many of the mounds at the Tak-i-Kesra, and found their foundations invariably composed of the fire-burnt brick.—*Layard, Nineveh*, i. p. 242; *Kinneir's Geographical Memoir*, pp. 253-54, 273, 274; *Porter's Travels*; *J. B. Fraser's Travels*.

CUBEBS, Piper cubeba.

Kababah, . . .	ARAB.	Lada barekor, .	MALAY.
Sin-bau-ka-ra-wa, .	BURM.	Timmue, . . .	NEPAL.
Poh-ching-kia, . .	OHIN.	Sughanda-marichu,	SANSK.
Dumki mirchi, . .	HIND.	Walgu-meria, . .	SINGH.
Kabab-chini, . .	JAV.	Val-mullaghu, . .	TAM.
Kumunkus, . . .		Chalava mirriahu, .	TEL.

The cubeb pepper of commerce is stated to be the fruits of Piper cubeba and P. caricum, both of them natives of Java, to which island their cultivation appears to be confined. Dumki mirchi and lada barekor, meaning 'tailed pepper,' are derived from the appearance of the dried fruit, which has always the footstalk adhering to it.—*Irvine; Crawford's Dict.* p. 117.

CUBERO. Don Pedro Sebastiano Cubero, author of the *Peregrinacion de la Mayor Parte del Mondo*, published at Saragossa 1688. He set out about 1650 from Moscow, with the Russian ambassador, to the court of Persia. From Ormuz he sailed to Damayn (Daman?), Surat, and Goa, where he found the capital of Portuguese Asia in a state of miserable decay, and its trade almost in the hands of the Dutch,

English, Swedes, and Danes. From Goa he sailed to Masulipatam, and thence to Malacca, already in the hands of the Dutch, and on to Manila, where he took ship across the Pacific to Mexico.

CUBE SPAR, or crystalline carbonate of lime, of good quality occurs in Nellore, Kurnool, and Cuddapah. It is used for mounting microscopic objects, and as a source of very pure lime. Rhomb spar or dolomite spar occurs in Cuddapah.

CUBIT, the Hindi hat'h. A measure of length, from the point of the elbow to the point of the middle finger. The Egyptians made use of the cubit measure, divided into six handbreadths, or twenty-four fingers, and also of the royal cubit, which consisted of this lesser cubit and a handbreadth over. The royal cubit contained twenty English inches and two-thirds. The Jews made use of the same measure, for length, of a cubit and a handbreadth. The Egyptians measured long distances by the Schœnus of about 6 miles in length. Land was measured by the aroura or half-acre, which, if square, measured a hundred cubits on each side. That a measure nearly the same was in use from the earliest times, we learn from the size of the pyramids. Exactly such was the cubit used in making the five smaller pyramids of Gizeh.—*Egypt. Inscript.* 2d series, pl. 46; *Ezekiel* xi. 5; *Herodotus*, lib. ii. p. 168; *Vyse's Pyramids in Sharpe's Egypt*, i. p. 167.

CUBYA KANYA, from Cubja, the spine, of the virgin, Kanya, a name of Kanouj.

CUCHHOURA, a small Rajput clan of Gorakhpur.—*Elliot*.

CUCHWAHA, a celebrated Rajput tribe. The rana of Amber is of the race who claim descent from Cush, second son of Rama, king of Ayodhya, who migrated and built the fort of Rotas, on the Sone. Authentic history commences in A.D. 294 with Raja Nola, who founded Narwar or Nishidr. Amber or Dandhwar, the early capital of Jeypore, was built by Jay Singh, and was a city of great architectural beauty.—*Tod*; *Thomas' Prinsep's Antiquities*, p. 259; *Elliot, Supp. Gloss.*

CUCIFERA THERAICA.

Doom; Gingerbread tree. | *Hyphano coriacea*, *Gært.*

Clumps of it occur near Thebes, in Upper Egypt. Its stem, instead of growing without branches like other palms, forks two or three times, thus assuming the appearance of a pandanus. The fruit is about the size of an orange, angular, irregularly formed, of a reddish colour, and has a spongy, tasteless, but nutritious rind. The albumen of the seed is hard and semi-transparent, and is turned into beads and other little ornaments. Its brown mealy rind resembles gingerbread.—*Eng. Cyc.* p. 385.

CUCUBALUS DRABA. *Gærtner*. A plant of the alpine vegetation of Kedarnath.—*Hoffmeister*.

CUCULIDÆ, the cuckoo family of birds, is of the tribe Scansores. Their outer toe is versatile, usually turned back. They mostly live on insects, a few on fruit. Some hatch their own eggs in nests constructed by themselves, others deposit their eggs in the nests of other birds. This family is divided as under:—

Sub-Fam. Cuculinae, <i>Siv.</i>	C. Himalayanus, <i>Vigors</i> .
True cuckoos, parasite cuckoos.	C. poliocephalus, <i>Latham</i> .
	C. Sonneratii, <i>Latham</i> .
Cuculus canorus, <i>Linn.</i> , Europe.	C. micropterus, <i>Gould</i> .
	C. striatus, <i>Drapiez</i> .

Hierococcyx varius, *Vahl*.

H. nasicolor, *Hodgson*.

H. sparverioides, *Vigors*.

Polyphasia nigra, *Blyth*.

P. tenuirostris, *Gray*.

P. merulina, *Malayana*.

Surniculus dioruroides, *Hodgson*.

S. lugubris, *Horsfield*.

Chrysococcyx *Hodgsoni*.

Moore.

C. lucidus of Australia.

C. xanthorhynchus, *Horsf.*

C. Malayanus, *Horsf.*

C. Basalis.

Coccyzus melanoleucos, *Gmelin*.

C. coromandus, *Linn.*

C. glandarius.

C. serratus of Africa.

C. afer of Africa.

Eudynamis orientalis, *L.*

E. Flindersii, *N. Zealand*.

Zenolostomus tristis, *Less.*

Z. viridirostris, *Jerdon*.

Z. Javanicus, *Burma*.

Z. Sumatranus.

Z. diardi of Malacca.

Phœnicophaps pyrrhoc-

phalus, *Ceylon*.

P. curvirostris, *Burma*.

P. callirhynchus.

Sub-Fam. Centropodinae.

Centropus rufipennis, *Ml.*

C. viridis, *Scopoli*.

Taccocua sibirica, *Gray*.

P. Leschenaultii, *Lesson*.

T. infuscat, *Blyth*.

T. affinis, *Blyth*.

Cuculus canorus is the cuckoo of Europe, Asia, Africa, Malay countries, and common in the Himalaya, visiting the plains during the cold season. The noisy koel is remarkable for the dissimilar colours of the sexes, and for parasitically laying in the nests of the crow. The coucol, or crow-pheasant, is another noisy and conspicuous bird wherever there is a little jungle. Phœnicophaps callirhynchus is one of the finest known cuckoos. Its bill is of a brilliant yellow, red, and black.—*Jerdon*. See Birds.

CUCUMBER, Cucumis sativus.

Kusaja, ARAB.	Khokra, HIND.
Coucombre, FR.	Cetrinolo; Coooneri, IT.
Gurken, GER.	Cohombro; Pepino, SP.

The cucumber (*Cucumis sativus*) is grown from seed at all seasons. The plants should never be too close. It thrives in all parts of India, and grows with much or little water; and, if allowed to climb over sticks or trellis-work, is out of the way of jackals and porcupines, who are fond of the fruit. The natives grow them in their fields, in the cold season, amongst grain and pulse of various sorts, and in the sandy beds of rivers during the hot weather. The cucumber of Numbers xi. 5 is the *Cucumis melo*, the melon.

Cucumber Seed Oil.

Antimun bij minlak, MAL.	Villerikai yennal, TAM.
Timun-biji-miniak,	Dosa kala nuna, TEL.
Katimun-biji-miniak,	

A clear, edible oil, obtained by expression from the seeds of *Cucurbita pepo* and *C. melapepo*.

The *Cucumis* genus of plants belongs to the Cucurbitaceæ. *C. cicutrisatus*, *Stocks*, the Wungoo of Sind, has an edible fruit about 6 inches long. *C. conomon*, *Thunb.*, an annual of Japan, is used for preserves.

The cucumber family of plants is largely preyed upon by a twelve-spotted species of the ladybird, which, alike in the grub and perfect state, feeds on the leaves and flower-buds.—*Jaffrey; Irvine; Voigt; Eng. Cyc.; W. Ic.; Von Mueller*.

CUCUMIS MELO. *Linn.* Melon, musk melon.

Betikh (musk melon), AR.	Baka-kala, MALAY.
Tha-khwa-hmwæ, BURM.	Gilas; Ghras, PANJ.
Tien-kwa; Hiang-kwa, CH.	Sarda; Palis, PUSHT.
Hu-kwa; Hwang-kwa,	Ghidro, SIND.
Kharbuzah, HIND., PERS.	Rata komadu, SINGH.
Labo-frangi, MALAY.	Mulan, TAM., TEL.

The native country of this valuable plant is unknown. Linnaeus says Tartary, but he does not give his authority. De Candolle says Asia; Roxburgh only knew it in a cultivated state in tropical India; and Professor Royle seems unacquainted with any wild station for it in the

Himalaya regions. It is cultivated in Persia and Afghanistan, the Panjab, and all over India. From time immemorial Kashmir has been famous for the excellence and abundance of its melons, which form a staple article of the food of the inhabitants; and the melons of Multan and Jhang are excellent. Dr. J. L. Stewart says that this fruit rapidly degenerates if sown in the plains. In Kābul it thrives, and is in perfection in October and November, when the first frost touches the plant. It is largely taken for sale to Peshawur.

CUCUMIS MOMORDICA. *Roxb.*

<i>C. muricatus</i> , Willd.	<i>Momordica sativa</i> , <i>Roxb.</i>
Phunti, BENG.	Kakari; Karkata kai, TAM.
Phunt; Tuti, HIND.	Pedda dosa kaia, . . TEL.
Kakra, PANJ.	Mullu dosa kaia, . . "

Cultivated throughout India; when young, is a good substitute for the common cucumber. Seeds occasionally ground into a meal. When the fruit is ripe, if eaten with a little sugar, it is little inferior to the melon, and reckoned very wholesome; natives use it in curries.—*Roxb.*

CUCUMIS PUBESCENS. *Willd.*

C. maderaspatanus, *Roxb.*

Fowl's cucumber, ENG.	Chibbur, SIND.
Kakri, Bun-gumuk, HIND.	Kekri, SINGH.
Raushanak, PERS.	Kodi, Nella budinga, TEL.

Grows wild in South India, in the Panjab, Hindustan, Bengal, and the Peninsula. Its small fruit is eaten by the natives, though they do not cultivate the plant; on ripening it becomes aromatic.—*Roxb.*; *Voigt*; *Stewart*; *Irvine*.

Cucumis dudain, Queen Anne's Pocket Melon, is a native of Persia, and produces a fruit variegated with green and orange, and oblong unequal green spots; when full ripe it becomes yellow, and then whitish. It has a very fragrant vinous musky smell, and a whitish, flaccid, insipid pulp.

CUCUMIS SATIVUS. *Linn.* Cucumber.

Kuand, ARAB.	Khiyar, PERS.
Kankari, DUKH.	Mutrulla, Sookasa, SANSK.
Fakus, EGYPT.	Rata kakari, . . SINGH.
Kira, also Susa, HIND.	Pipingya, "
Antimun, Timmun, MAL.	Mulu veleri, TAM.
Mullen velleri, MALEAL.	Vellerikal, "
Khira, PANJ.	Dosa kaia, TEL.

This is commonly grown and largely used all over India, but most Europeans find it difficult to digest. Cucumbers of the *C. sativus* and *C. utilisissimus* are consumed in immense quantities by the Karens and Burmans, who seem to prefer them large and yellow, rather than pluck them when green and tender. The seeds of this and of *C. utilisissimus* are considered cooling.

CUCUMIS TUBEROSUS. *Heyne.*

Adulay kai, TAM.	Casara kaia, TEL.
Nellay piku, "	

This is a pot vegetable, eaten by the people in curry. It grows wild in cotton soils of North Tinnevely. It is very prolific, and on waste lands, headlands, etc., in great abundance. A coolie load of tubers gives six large measures of fine flour, considered by the natives a most excellent breadstuff. One measure of the flour is considered equal to two measures of the *Panicum glossarium*, which latter is the staple food of North Tinnevely. The tubers are washed and peeled, then bruised on a rough stone, after which it is washed precisely like arrowroot, the washing extending over seven or eight days, when the starch is dried in the sun. The flour is almost

as white as arrowroot; it is reduced to congee quite as easily, by pouring boiling water upon a spoonful or two which has been first moistened with cold water. The fruit, a small capsule used in sweetmeats, is known as the Adully.—*Roxb.*; *Rev. J. F. Kearns in Agri-Hort. Soc. Pro.* 1862.

CUCUMIS UTILISSIMUS. *Roxb.*

Kiza-ut-taul, ARAB.	Kakri, Kakni, HIND.
Kankur, also Karkti, BENG.	Khyar-i-badrang, . . PERS.
Tha-khwa, BURM.	Dosa, Nakka dosa, . . TEL.
Gurkel lange, GER.	

Cultivated throughout India; and Dr. Stewart has seen it at 6000 feet, on the Ravi, in the hills. This gourd attains 2 or 2½ feet, and is stated to reach the extraordinary length of 5 feet. When ripe, if carefully gathered and suspended, it will keep good for several months, from which circumstance they are valuable for long voyages. It is pickled when half grown. The seeds, like those of the other cucurbitaceous fruits, contain much farinaceous matter, blended with a large portion of mild oil. The natives dry and grind them into a meal, which they employ as an article of diet; they also express a mild oil from them, which they use in food and to burn in their lamps. The seeds are highly nourishing, and well deserving of a more extensive culture than is bestowed on them at present. The powder of the toasted seeds mixed with sugar is said to be a powerful diuretic, and serviceable in promoting the passage of sand or gravel. In Roxburgh's time, in the Guntur Circar, these seeds formed a considerable branch of commerce.—*Roxb.*; *Cal. Ex.* 1862; *Honig*.

CUCURBITA, a genus of the Cucurbitaceæ, which includes all pumpkins, gourds, squashes, and vegetable marrow, and of these there are innumerable varieties.

C. moschata, *Duchesne*, is the musky gourd.

C. melopepo, *Linn.*, the squash gourd, can be stored for months. It is supposed to be a variety of *C. pepo*.

C. pepo, *Linn.*, the pumpkin, is largely grown in particular localities. Its naturalization in desert tracts would be a boon.

C. aurantia. —? *Yin-kwa*, CHIN. A deep golden-coloured gourd of Cheh-kiang. It is rather more tender than the other species.

C. lobata. *Tinda*, PANJ. In the Panjab this is a small round gourd when young, at which time it makes a most delicious vegetable for the table; the fruit is not bigger than a small turnip.—*Powell*; *Eng. Cyc.*; *Smith*.

CUCURBITACEÆ, a natural order of climbing or creeping plants, the gourd tribe, chiefly natives of hot countries, ranged by Meisner under 35, and by Endlicher under 28 genera. Of these, there occur in Egypt, Abyssinia, and Arabia 8, in Astracan and Persia and the Levant 8, in China and Japan 6, and in the East Indies 160 species, of which 46 are natives of India,—*ach-mandra*, *benincasa*, *bryonia*, *bryonopsis*, *citrullus*, *coccinia*, *cucumis*, *cucurbita*, *erythropalum*, *herpetospermum*, *gymnopetalum*, *karivia*, *laginaria*, *luffa*, *melothria*, *momordica*, *mukia*, *pilogyne*, *sicyos*, *trichosanthes*, *Zehneria*. Some of the species afford cathartics of remarkable power, others have useful edible fruits. The fruit varies much in size, form, and external characters, but is generally fleshy within, and its pulp is often so saturated with water that it cannot be dried. The roots of most of the order contain starch,

often associated with an acrid poisonous matter, which can be separated by washing the powdered root with water, in which the acrid matter dissolves, while the starch is left. The seeds of most of the order are of a mild sweet taste, give good emulsions with water, and yield a fixed oil by expression. Few of the plants of this order are indigenous in Europe. In tropical countries this order gives the inhabitants a large portion of their food, which it often affords of the finest quality in the most arid deserts, or on barren swamps and islands. In Persia, China, and Kashmir, they are cultivated on the lakes, on the floating collections of weeds common in these localities; in India they are very abundant, either in the wild or cultivated state. According to Dr. A. Hunter, the Cucurbitaceæ abound in fibres of great length. The following are the chief dietetical species:—

- Cucurbita maxima*. The seeds yield oil by expression, and are considered cooling.
C. ovifera, L. Vegetable marrow.
Benincasa cerifera, Peetha.
Cucumis melo, melon, Kurbooz. Seeds oily, and readily become rancid.
C. Madagascariensis, Roxb. Fl. Ind. iii. p. 723.
C. patescens, wild, common near Saharanpur; becomes aromatic on ripening.
C. momordica, Phoot.
C. sativus, cucumber, Kheera. Fruit contains sugar; seeds yield a mild oil.
C. utilis, Kukkree.
Luffa pentandra, Ghia.
L. acutangula, Kalee-tori.
Momordica charantia, Kurella. Fruit slightly bitter.
Trichosanthes anguina, Chuchinga.
T. dioica, Palwal.
T. cucumerina, Jungle-chuchinga.

CUCURBITA MAXIMA. *Duch.*

- Cucurbita melopepo*, Roxb. | Pumpkin; Gourd.
 Suphura kuma, . BENG. | Al? . . . KANAWAR.
 Shwa pha yung, . BURM. | Daghan, . . . LADAKH.
 Pha yung kha, . . . | Shora, . . . MALKAL.
 Nan-kwa, Kiug-kwa, CHIN. | Shakari or Shakara, . . .
 Red or squash gourd, ENG. | Kadu safed, . . . PERS.
 Mitha kaddu? . . . HIND. | Pushiny kaia, . . . TAM.
 Halwa kaddu? . . . | Gumaddi kaia, . . . TEL.

Cultivated throughout India, in Kashmir, up to 6000 or 9000 feet, and in Ladakh up to 10,500 feet. It is made to trail over houses and trees. It needs much water and good soil. The fruit is very large; when boiled, it tastes like a young carrot, and is used in various ways; its leaves are boiled as greens. This gourd is presented with great ceremony in China to married childless women, on the evening of the festival of mid autumn, which happens on the 15th of the 8th month of the Chinese year. In India the tallow gourd is presented to a wedded pair.—*Voigt*; *Stewart*; *Gen. Med. Top.*

CUCURBITA OVIFERA. *Linn.*

Vegetable marrow, ENG. | Simai-pusini kai, . TAM.

This is the most wholesome of the Cucurbitaceæ, and is largely grown by the market gardeners of India. It is said to be indigenous at Astracan; it is an excellent vegetable, of easy culture in good rich soil.—*Jaffrey*; *Voigt*.

CUDBEAR is the Taze-fen and Shih-jui of the Chinese. It is a powder procured from the Lichen *Tartaricus*, a plant found in Iceland, used in dyeing violet, purple, or crimson. Its colours are not durable when it is employed alone, and it is therefore used as a body to other expensive dyes, as indigo, cochineal, etc., making them more lively. It is used but little by the Chinese, and

the demand in that market is not great.—*Compendious Description*. See Dyes.

CUDDALORE, a town on the Coromandel coast, in lat. 11° 42' 45" N., long. 79° 48' 45" E.; population, 40,464. It is in the South Arcot district, and has the three parts of old Cuddalore, Munja Coopum of New Town, and Fort St. David, the last of which, in 1684, Sumbaji gave permission to build. In 1702 the fortifications were rebuilt; and after the capitulation of Madras to La Bourdonnais in 1740, Fort St. David became the seat of government. The French advanced against this fort in 1746, but were defeated by Mahfuz Khan. Duplex besieged it, but retreated; and he subsequently, in 1749, failed in a night attack on the town. Major Lawrence made it his headquarters. In 1758 Lally took Cuddalore town without opposition; and on the 2d June 1758 Fort St. David surrendered, and the fortifications were razed. In 1760 it was retaken by Colonel Coote, but in 1782 was again taken by the French under M. Bussy.—*Findlay*.

CUDDAPAH, a town in lat. 14° 28' 49" N., and long. 78° 51' 47" E., which gives its name to a revenue district of the Madras Presidency, lying between lat. 13° 25' and 16° 20' N., and long. 77° 55' and 79° 40' E.; area, 8367 square miles; population, 1,351,194. It has the districts of Kurnool and Guntur on the north, and Mysore and North Arcot on the south. The river Pennar enters the district at Tallapodatoor, and, after many windings, passes by Sidhout within nine miles from Cuddapah town, and flows in an easterly course to the Bay of Bengal.

There are diamond mines about 7 miles north-east of the town of Cuddapah, on both banks of the Pennar. Iron ore is abundant in the hills. Cotton, wheat, and indigo are the chief crops. This district formed part of the territories of the Bijanagar dynasty. In A.D. 1589 it fell to the armies of the Kutub Shahi dynasty of Golconda, who sacked the city, and broke the idol of the great temple. It was afterwards under the Adal Shahi rulers of Bijapur, later on taken by Hyder Ali about A.D. 1779, and its ruler, Halim Khan, carried captive. In 1800 it was ceded by the Nizam to the British. The chief towns are Sidhout, Jummul Madagoo, Badwail, Pulgooralupully, Giddalore, and Jungam-razpillay. In the district are 103,676 Mahomedans and 4973 Christians.

The non-Aryan migratory tribes are the Yanadi, a hill tribe of small stature, determined plunderers of the shepherd flocks, but are valuable as foresters.

The Yerkala are wholly migratory and predatory; steal into houses at night, and wrench the jewels from the ears of the women and children.

The Chenchuwar, a physically fine race of men, but incorrigibly predatory and regardless of human life.

The Sugoli, a wandering, pilfering race, who have a picturesque costume.—*Imp. Gaz.*

CUDDUNG of Coorg, a breastwork.

CULCURNI, a Tamil accountant.

CULITLAWAN BARK is obtained from several species of cinnamonum trees.

CULLEN, GENERAL, of the Madras Artillery, long a Resident at the court of the raja of Travancore; for half a century a contributor to physical science in India. He wrote on the Geological

Features from Madras to Bellary, Mad. Lit. Trans. 1827, i.; Account of the Fall of Rain at Different Stations on the Western Ghats, Rep. Brit. Ass. 1844, 1846, ii. 23; On the Influence of Trees on Climate, Mad. Lit. Trans. xv. 450. Born 17th May 1785. He died at Allepey, 1st October 1862.

CULLENIA EXCELSA. *W. Jc.*

Kattoo-bolde, . SINGH. | Malai konji maram, TAM.
Kattoo heriteya, . , | Durio Zeylaucius, Gard.

A large tall tree of the southern part of the Peninsula of India, and common in the central province of Ceylon, at an elevation of from 2000 to 5000 feet; trunk straight, from 60 to 80 feet high. Wood white, rather open-grained, apparently not very good, but the outside wood only was examined. Under the microscope, its longitudinal section is very peculiar.—*Wight; Gibson; Thw.*

CULLEN'S LIQUID, for preserving wood and iron, is a mixture of two measures (by bulk) of coal-tar to one measure of quicklime and one of powdered charcoal. Lime is freely dissolved in coal-tar, with which it forms a cement which takes readily to wood, brick, iron, or other building materials, however wet, and which sets with nearly the cohesion of mortar or hydraulic lime. With the addition of the charcoal, mixed in an exceedingly fine state, it is found that white ants, which attack and destroy creosoted wood, were effectually excluded; carbon, it appears, being especially poisonous to them. Six pieces of deodar, or Himalaya pine, were buried in a place particularly infested with white ants, three of the pieces being protected by Cullen's preparation, and the three others being left in their natural state. At the end of five months the blocks were dug up, when those which had been coated were found to be as sound as when put down, while those which had been left unprotected were found riddled with the perforations of the ants.

In the case of iron, creosote is believed to be a complete protection in ordinary soils, but in salt-petre soils is said to be of no use whatever. Six pieces of thin iron were buried, three being coated with Cullen's preparation, while the others were left as they were cut from the original plate; the coated iron was completely protected for the time tried, whereas the pieces put down in their ordinary state were found to have been much rusted.

CULLUKA, an ancient Hindu commentator on the book of Menu, the Hindu lawgiver.

CULTIVATORS of the soil in British India are known as the ryot and the zamindar, the former being an Arabic word, the latter from the Persian. The Tibetans style them Glupa. In India, the chief cultivating races are the Jat, Kapa, Khassa, Kunbi, Kurmi, Mala, Wakkala, Vallalar, and the bulk of them are co-proprietors with the rulers. Menu says cultivated land is the property of him who cut away the wood, or who cleared and tilled it,—an ordinance binding on the whole Hindu race, and which no international wars or conquest could overturn. In Bengal, a man with a helping boy, with a plough and pair of bullocks, will cultivate as much as three acres, or even more. Throughout India their crops are designated by the seasons at which they occur, as Bladuwi, Kharif, Rabi.—*Tod's Rajasthan*, i. p. 496. See Agriculture; Crops; Soil.

CUMBHA, in Hindu astronomy, the solar sign Aquarius. In explanation of the analogy

between the vessels emblematic of the Isis of the Nile and the Ganges, there is a festival sacred to the sage Agastya, who presides over the star Canopus, when the sun enters Virgo (Kaniya). The Canacumpa is then personified under the epithet Cumbha-yoni; and the votary is instructed to pour water into a sea-shell, in which, having placed white flowers and unground rice, turning his face to the south, he offers it with this invocation, 'Hail, Cumbha-yoni, born in the sight of Mitra and Varuna (the sun and water divinities), bright as the blossom of the cusa (grass), who sprang from Agni (fire) and Maruta.'

CUMBI, TAM., TEL., *Gardenia lucida*, yields the Dikamilli or Cumbi-pisin, a strong, disagreeable-smelling gum-resin, procurable in most Indian bazars. It is much used by native doctors as an external application, when dissolved in spirits, for cleaning foul ulcers. It is used by some European practitioners in case of worms in children.

CUMBLI, HIND., also written Kamli, Cumul, and Camal, and also called Camelinc, is from the Sanskrit Kamal, a blanket, and is a coarse woollen blanket worn by the peasantry of all India, and sold at Rs. 1½ to 100. Cumblis are woven in almost every district of India of the wool of the country, which is spun by hand. The yarn is sized with the juice of the common squill; the wool is beaten with a hand batten (in the way that sailors adopt in forming mats for protecting the rigging), no reed being used; a finer description of cumbli, of which the sepoy cloaks were formerly made, is manufactured at Bellary or in its neighbourhood. Mysore cumblis of superior quality, in black and white colours, are sold at from Rs. 25 to 100 each; ordinary sizes, Rs. 4 to 20 each. Bellary cumblis are well made, but are not of so high value as those of the Mysore district; they are 6 cubits long by 3. The cumbli is usually made in pieces of two or three feet broad, and five or six or more long, and generally very coarse, of a dark or black colour. Sometimes, however, they are manufactured larger and finer, and striped or spotted black and white. There may be some connection between the Sanskrit word Kamal and the Grecian Chlamus and the Latin Chlamys. It is barely possible, also, it may not be unconnected with the Arabic Kamis, from which we have the Italian Camicia, the Portuguese Camisa, and the French Chemise. The Chlamys was generally, like the Cumblis, made of wool, and in shape it was much the same, being half the breadth of its length. A similar connection may perhaps exist between the Persian and Hindi Suyā, the Latin Sagum, and the modern Spanish Saya. Good cumblis are made in Ulwar, and in the neighbourhood of Meerapur in Meerut. The Samsu cumbli of Meerut sometimes sells as high as 25 rupees. It is made of the wool of lambskins, shorn about three days after their birth.—*Elliot, Supp. Gloss.; Hindu Infanticide*, p. 195.

CUMBUM, a town in lat. 16° 34' 15" N., and long. 79° 91' E., in the eastern part of the Kurnool district; has a tank of 15 miles circumference, formed by damming up the Gundla Kama river.

CUMIN. The black cumin of Scripture is the *Nigella sativa*, the *μελάνθιον* of Hippocrates and Dioscorides. The *Helleborus niger*, however, has also been named cumin.

